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A Comparative Study

Edited by
Milan J. Titus and Paul P.M. Burgers

Amsterdam University Press

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Preface

This book is the first of a series dealing with recent and past experiences of crises in Indonesia, and aims at disseminating the results of a research program on the same subject. The Experiences with Crisis program was a subset of the broader Indonesia in Transition program, sponsored by the Royal Dutch Academy of Arts and Sciences (KNAW) in the period 2001-2005. This latter program was set up as a multidisciplinary research in social, cultural, and historical sciences, bringing together Indonesian and Dutch scholars from several renowned academic institutions with specialist knowledge on the region. The purpose of this wider program was to study the recent social, cultural, and political-economic changes in Indonesia since the fall of the New Order regime and the impacts of the recent economic crisis, from historical and contemporary perspectives. The Indonesia in Transition program consisted of four subprograms, of which Experiences with Crisis was one of the largest and most comprehensive.

It is the purpose of this book to present the results of the Experiences with Crisis sub-program which examined and analyzed livelihood strategies, coping mechanisms, and resource management practices in rural communities in Indonesia during and just after the recent crisis (1997-2003). As this crisis really was a multidimensional one, with its various sociocultural, political-economic, and environmental implications, its impacts had to be studied at various levels of analysis and in different types of environmental settings, communities and households. The Livelihood and Resources component of the sub-program, therefore, included no fewer than ten research projects in different locations: three individual (PhD) research projects in rather remote areas of the outer provinces, namely Torajaland (Central Sulawesi), Lower Mahakam (East Kalimantan), and Kerinci (W. Sumatra), which were conducted by Dutch researchers (E. de Jong, G. Nooteboom, and P. Burgers). Four other Ph.D. research projects were carried out by Indonesian geographers from Gadjah Mada University in different types of villages in the Special Region of Yogyakarta (Central Java). These comparative analyses examined the differential impacts of the crisis in quickly transforming rural communities in densely populated areas (see contributions by R. Riyanta, S.W. Djarot, M. Baiquni, and A. Sutanto). Finally, three village

studies were carried out by Dutch graduate students in human geography from Utrecht University during their five months of fieldwork in Gowa District (South Sulawesi) (see contributions by M. Singeling, M. Rijerse, and R. Vogelij). Their field studies were developed into full master's theses, which were supervised by the editor who wrote the concluding chapter in this book.

The Livelihood and Resources component of the Experiences with Crisis sub-program focused on three major research questions or issues:

– What were the main impacts of the economic crisis on rural livelihoods in Indonesia? This question was analyzed in terms of differences in vulnerability or resilience of households and communities, and to a lesser extent also differences in sustainability of the resource use impacts.
– Which response mechanisms were developed at the community and the household levels to cope with these impacts? This was analyzed in terms of adaptations in resource use, livelihood strategies, and institutional arrangements in response to the crisis.
– Who were the winners and the losers of the coping strategies induced by the crisis? This question was analyzed in terms of differential benefits according to socioeconomic position, life-cycle phase, and main type of livelihood base.

The focus of the Livelihood and Resources research on livelihood impacts and responses in rural communities was chosen for several reasons: First, because there was an obvious lack of reliable information on the differential nature of the impacts of the crisis in rural areas in Indonesia (cf. Gérard & Ruf 2000), and second, because there were numerous unproved assumptions with respect to these impacts, which also affected the government's policies. For example, the crisis in rural areas was often assumed to be less severe than in the urban areas, because the rural economy was less integrated into international markets, while public budget cuts, cost price increases, and mass dismissals were especially hitting the urban economies (cf. Booth 2002).

Moreover, rural communities are often assumed to possess a higher degree of social coherence and economic flexibility in absorbing surplus labor, sharing agricultural produce and income, and switching production as compared to urban societies/economies which are much more commercialized and individualized, and considerably more dependent on imported supplies/inputs that have to be bought at increasingly unfavorable prices due to the monetary effects of the crisis.

Contrary to these assumptions, most rural communities in Indonesia have been incorporated into larger political and economic networks for a long time, and, consequently, also have been strongly commercialized

and monetarized. At the same time these communities were struggling with severe forms of population pressure upon local resources through the proliferation of sub-marginal farms and landlessness. Under these circumstances it may be expected that both social coherence and traditional produce or resource sharing arrangements have come under strong pressure, and particularly so under the recent crisis conditions which were aggravated by the prolonged drought caused by El Niño. It is not surprising, therefore, that a growing stream of studies suggests a broad spectrum of impacts and experiences of the crisis among the various types of rural communities in Indonesia, not only because of the wide differences in agro-ecological conditions and resource use systems, but also due to different sociocultural conditions and differences in (local) policies.

It is the purpose of this study to identify and elucidate the role of these differentiating factors, as well as the differential response patterns which they have engendered with respect to coping with the impacts of the crisis. This was achieved by comparing a series of case studies in different types of rural communities; within each case study, the use of livelihood was specifically analyzed. This approach implies that communities and households construct their livelihoods on the basis of rational choices resulting from various opportunities and limitations, which are determined by their available assets, capabilities and needs within the framework of the local environmental, sociocultural, and political-economic conditions. Usually these choices are articulated through what is known as a "household strategy", wherein long-term stress conditions and regularly recurring disturbances are anticipated, and coping responses are conceived as *ex post facto* reactions to sudden shocks that could not be foreseen or prevented at the individual or household levels (cf. White, Titus and Boomgaard 2002). This analytical framework has been very helpful in providing the various case studies in this book a common research focus, which enabled a comparative approach and the subsequent drawing of conclusions at higher levels of analysis.

The structure of the book consists of three clusters of case studies grouped according to regional and thematic criteria. The first three contributions study the crisis impacts and responses in relatively isolated rural communities in the outer provinces of Indonesia: East Kalimantan, Central Sulawesi, and West Sumatra. With their strong anthropological orientation, these studies mainly focus on the social aspects of livelihood construction and resource use, namely changing social relations and institutional arrangements regulating access to resources. In his study, Burgers, as a human geographer, also concentrates on specific adaptations in the resource use systems. Much attention is also devoted to the role of shifting social networks under the impact of macro-level processes such as globalization, the economic crisis, and various

types of policy interventions. This emphasis on the social aspects of livelihood construction and crisis responses is quite different from the approach in the other two clusters of case studies, which mainly focus on the changes and adaptations in the resource use systems and livelihood strategies as such.

The second cluster consists of four case studies on the effects of rural development and the recent crisis on rural resource use in different types of village communities in the Special Region of Yogyakarta in Inner Indonesia. These studies are based on comparative analyses of livelihood strategies and coping responses adopted by households and their enterprises in various agro-economic and environmental settings, but situated in densely populated rural areas with strong relations to nearby urban centers. Each of the four studies also presents a comparative analysis of the crisis impacts and responses at the community level. The communities studied range from highly commercialized lowland villages to (semi) subsistence-oriented upland villages, and from remote rural settlements to semi-urbanized settlements. Furthermore, these studies are much more based on the analysis of quantitative data, collected at the household and enterprise levels, as compared to the case studies in the first cluster.

A similar approach characterizes the third cluster of case studies; these focus on the impacts of the crisis on livelihood conditions and coping responses in three Macassarese villages in Gowa District (southwest Sulawesi). Again, these villages have been selected in such a way that they represent the major livelihood systems and environmental settings of Macassarese society. The first case study was conducted in a mountain village in the upper reaches of the Jeneberang Valley, where intensive vegetable cultivation prevails. The second study deals with an upland village in the middle reaches of the same valley, with a mixed wet rice and upland agriculture economy. The third study concerns a fishing village with a mixed farm/non-farm economy at the mouth of the Jeneberang River, near the city of Makassar.

Finally, the concluding chapter attempts to answer the three major research questions by synthesizing the main results and conclusions from the respective case studies and placing them in a wider perspective.

The editors wish to express their gratitude to the Royal Dutch Academy of Arts and Sciences (KNAW), the International Institute for Asian Studies (IIAS), and Amsterdam University Press (AUP) for enabling the publication of this volume. In particular, we would like to thank the Urban and Regional Research Center (URU) of the Department of Human Geography & Urban and Regional Planning, Faculty of Geosciences, Utrecht University, for their support to contribute financially to the publication of this book. This also applies to the many Indonesian institu-

tions that facilitated successful cooperation in the respective research projects, such as the Indonesian Institute of Sciences (LIPI) and the various cooperating universities such as including Gadjah Mada University, Hasanuddin University, and Andalas University. Our appreciation also goes to the local authorities and planning agencies (BAPPEDA II), all of whom helped to providely favorable conditions for the researchers in the respective communities. Our special thanks, however, are reserved for the two secretaries of the Faculty of Geosciences of Utrecht University, Anneke van der Loo and Paula Duivenvoorde, who have patiently and meticuously prepared the texts and figures for this publication.

Milan J. Titus and Paul P.M. Burgers
December 2008

1 Making a Living in Turbulent Times: Livelihoods and Resource Allocation in Tana Toraja During Indonesia's Economic and Political Crises

Edwin de Jong

Since 1997, it has become clear that the economic and political crises in Indonesia have taken different shapes. The crises have "had varied and often highly contradictory impacts in different regions, economic sectors and among different social groups" (White et al 2002: 149-150). More recently conducted micro-studies show a much more heterogeneous range of impacts, experiences, and responses than the basically monotonous yet puzzling picture ensuing from large-scale surveys carried out shortly after the onset of the Indonesian crises (Lont and White 2003). However, many of these micro-studies still view entire ethnic groups or communities under investigation as homogeneous, often overemphasizing "survival strategies" and ignoring the concomitant challenges and opportunities emerging from the crises.

This study provides a picture of the great variety of ways and the extent to which the Indonesian crises influenced the livelihoods and resource allocations of people in Tana Toraja, a district in the Indonesian province of South Sulawesi. Two contrasting locations (in socioeconomic, political, and even religious respects) were selected, and the various wealth groups were differentiated.[1]

The difference between the northern and southern regions of Tana Toraja is striking in many ways, especially with regard to social organization and stratification, ceremonial activities, and economic and political aspects. Kurre[2] is an example of a rice-growing village in the northern area of Tana Toraja where the lives of the inhabitants are centered on a variety of rituals (predominantly funeral and house-building ceremonies). Through the funeral ceremony, the Torajan self (place and status in society) is manifested and validated.[3] Competition between ascribed status and achieved wealth takes the form of a symbolic battle on the ceremonial field between blood ties and money (Volkman 1980: 8). These extravagant and costly potlatches explain partly why Kurre's dwellers and their family members go in search of money far away from their homeland. Consequently, the livelihood activities within this village are basically composed of the cultivation of subsistence crops, raising livestock, and migration (or remittances).

In contrast to the rice-growing village of Kurre, Sabara represents a southern Torajan village where the majority of the population is involved in the cultivation of a large variety of cash crops, such as coffee, cacao, vanilla, and clove. The uneven distribution of wet rice fields among Sabara's inhabitants prevents more than half of the farmers from cultivating rice. In this region, blood ties determine status, and mobility between the different classes rarely occurs. Because of the impossibility of improving one's social status at funeral ceremonies, the society at large refrains from organizing large-scale rituals; this leaves the *puang* (traditional rulers) from the highest class unrivalled in their extraordinary displays of extravagance which reinforce their authority. As in Kurre, most households in Sabara have one or more family members who have migrated to other places in the Indonesian archipelago. However, migration was undertaken to earn a living rather than to accumulate considerable financial resources to contribute toward funeral ceremonies.

The contrasting cases – with regard to context, resources, and livelihood activities – were selected in order to ascertain whether crisis effects and responses typically correspond to a particular class or group of society, location, or ethnic group as a whole. The chapter, thus, aims to draw lessons from a comparative study of Kurre and Sabara for various social levels of Torajan society (household, wealth group, village, region). Considering the high number of migrant family members in both locations, the "non-local" aspects (migration and remittances) will be examined in an attempt to understand the full contours of recent transformations in rural livelihoods.

In this chapter specific attention is paid to "productive" livelihood activities, defined here as all activities undertaken by household members in order to earn an income or to create useful outputs that can be used directly by the household (Ashley et al 2003). According to Frank Ellis (2000: 3), "Most rural livelihoods are found to depend on a diverse portfolio of activities and income sources amongst which crop and livestock production feature alongside many other contributions to family well-being", and "livelihood diversification is widespread and is found in all locations, as well as across farm sizes and range of income and wealth" (Ellis 2000: 4). The diversification of activities is more or less the result of a conscious or unconscious long-term strategy of the household to establish, secure, or enhance their living. The plethora of activities might reveal a particular pattern over time. Identifying and interpreting these patterns and their changes make up the basis for locating the effects of the crises. As the livelihood activity patterns in Tana Toraja (as elsewhere in the world) depend largely on resource allocation or wealth, the changes in livelihood patterns are assessed by differentiating the various wealth groups found in Tana Toraja.

Because of the complexity of Torajan society and its embeddedness in a wide cultural repertoire, I start this chapter with a short discussion of the sociocultural context in which the case studies are situated. This section will be followed by an overview of the numerous resources and livelihood activities available to Torajan people to make a living. Subsequently, I outline the major changes in the livelihood conditions that took place in Tana Toraja during the recent crisis years (1997-2003) before turning to the two case studies. In the village studies I will examine whether these changing conditions also led to changing resource allocations or livelihood activities, and, if so, in what way. The chapter closes with some conclusions on resource allocation and livelihoods in Tana Toraja during the recent economic and political crises, and provides some recommendations for further crisis research in general.

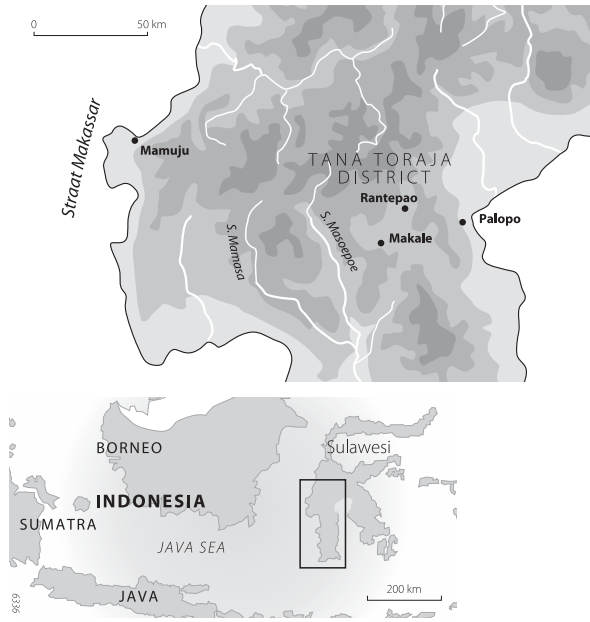
Tana Toraja

The regency of Tana Toraja is located 350 kilometers northwards from the capital city of the Indonesian province South Sulawesi (see map 1). Tana Toraja is a mountainous region covered with rice terraces, pine forests, bamboo groves, and groves of coconut palms. The mountain plateau is traversed by the brown water of the Sa'dan River and its tributaries. Tana Toraja covers an area of 3,178 square kilometers and it is populated by a little more than 400,000 inhabitants (BPS Kabupaten Tana Toraja 2004a). Many people have left their homeland in search of work, for educational purposes, or to escape the prevailing social system. It is estimated that around 400,000 to one million Torajan people live outside the region.[4]

On hillocks in the midst of the rice terraces stand large saddle-roofed houses (*tongkonan*) decorated with colorful carvings. These houses "provide more than shelter, they are extremely important modes in the kinship network – the points of reference through which one traces familial ties" (Waterson 2000: 116). Family trees and generations are important in Torajan society and even the lowest class (slave class) are well aware of their genealogy. People consider themselves related to others through a particular house and are invariably able to name the houses where their parents and grandparents were born. When we talk about Torajan kinship, a "house" idiom predominates (Waterson 1991). Hundreds to thousands of people feel deeply attached to a *tongkonan*. Their place (and thus rights and obligations) in society is quite literally defined by the way they are related to the *tongkonan* and is manifested or activated through ceremonial activities.

Since Dutch colonizers set foot on Tana Toraja in the beginning of the twentieth century century, some 87 percent of the population have

Figure 1.1 *The island of Sulawesi and the regency of Tana Toraja*



become Christian.[5] The remaining Torajan population are either Muslim or adherents of *aluk to dolo*, the traditional religion. Before the Torajans came into contact with the outside world (Dutch administrators and missionaries) they did not have any conception of a separate domain of thought and action directed towards the spirit world (Volkman 2000: 120). *Aluk to dolo* refers to the way in which both rituals and daily life are to be conducted (Volkman and Caldwell 1991). Presently it seems that *aluk* has faded away as an all-embracing way of life and thought "but as an idea it has been revived, and has given the Toraja a firm sense of identity" (Volkman 2000: 121). A wealth of rituals, which are profoundly linked to agricultural cycles, houses, and to death and rebirth, has remained the center of Torajan life. These rituals also seem to have enhanced, rebuilt, and reinforced Torajan identity for migrants in a multiethnic and religious Indonesian state. While migrants might have left their kinship networks, "paradoxically they have done so partly in order to provide for their ancestors (and more immediate family) at times of death" (Waterson and Volkman 2000: 114).

Torajan society is stratified into three to four levels. A person's status in this system is determined by birth and wealth. Through the funeral ceremony, the Torajan self (place and status in society) is manifested and validated. Competition between ascribed status and achieved wealth

is symbolically carried out in a battle on the ceremonial field between blood ties and money (Volkman 1980: 8). The necessity of upholding honor and status lead many Torajans into an ever-increasing slaughter of buffalo and pigs at funeral ceremonies, accompanied by a reception of thousands of guests. At death ceremonies, guests bring plenty of gifts, such as water buffalo, pigs, money, palmwine, and so forth, thereby initiating a new debt relationship or ending one. It is expected that the same kind of gift (in size, weight, and price) is returned to the giver at future ceremonies. Whereas debts of this kind are inheritable, it is not necessary to undo the debt in one's present life. "Any Toraja has intricate networks of such debts, acquired by inheritance, adoption, loyalty, or other peculiarities of personal history" (Volkman 2000: 125).

These extravagant ceremonies, which sometimes even receive national or international media attention, put a high pressure on people's financial resources and usually force them to migrate to find a well-paid job. The funeral ritual is so important that it is even held when a Torajan dies in another region of Indonesia or in a distant country. Most migrants return to the Torajan highlands (even from distant countries) for funerals of kin and other important rituals. It seems that these rituals are an efficient mechanism for maintaining remarkably strong ties between migrants and Torajans in the highlands.

Making a living in Tana Toraja: a historical perspective

The inhabitants of Tana Toraja derive their living mainly from agriculture, livestock, tourism, government jobs and small-scale industry and manufacturing. The majority (82.49 percent) of the economically active population in Tana Toraja is involved in agriculture (BPS Kabupaten Tana Toraja 2000c: 29). The main subsistence crops grown in the regency are rice, cassava, maize, and vegetables. Rice plays a major role in rituals and it is the preferred Torajan staple. Except for some large landholders, most people do not own enough land to provide them with rice all year round and they have to buy the rice needed or/and supplement their diet with other crops grown in their garden. Contrary to what the green landscape and rice-field-covered mountains may suggest, the soil of most of the land in the region is actually infertile or poorly suited for cultivation (Nooy-Palm 1979a: 13). The introduction of "high-yield variety" seeds, fertilizer, pesticides, technical assistance, and improvement of irrigation systems by the Indonesian government in the 1970s increased the yearly amount of rice harvested.[6] Mechanization made it possible to prepare larger plots of land over a shorter time span, while the use of pesticides with the improved varieties greatly reduced losses and fluctuations in harvest. On the other hand, these new

techniques needed larger investments, which imposed constraints upon lower income earners (if they possessed rice fields at all). Additionally, the development of waterworks lagged behind so that the success or failure of the harvest (or double cropping) for the majority of the rice farmers still depends on the amount of annual rainfall.

Next to the cultivation of rice on rain-fed paddy fields, many farmers grow cash crops such as coffee, cacao, clove, and vanilla on dry land. Agricultural production for the national and international markets, however, is generally small scale in nature, and commercial estates are rare. Most farming is done by individual smallholders who grow a variety of crops on family-owned plots. Coffee (both arabica and robusta) is by far the most popular commercial crop grown. Robusta is generally grown for domestic consumption or the local market, at least before 1998. Arabica had been cultivated for the world market in the upland regions of Tana Toraja since 1870 (Nooy-Palm 2003: 87). In the early twentieth century, coffee production provided the main means for obtaining cash and brought prosperity to some large landowners in the Torajan highlands. By 1928, coffee prices were high and centers of coffee production were booming. However, the reliance on an economy increasingly dependent on exports made Torajans also vulnerable to fluctuations in world demand and coffee prices. Especially during the Great Depression in the late 1930s the bottom had fallen out of the coffee market and Torajans had to struggle to find cash (Bigalke 1981: 254). In the following period, the Torajan economy remained largely dependent on an unstable international coffee market. Nevertheless, it was not until the late 1970s that the cultivation of cloves was introduced in the highlands of Tana Toraja as a second cash crop, next to coffee. At that time, Torajan farmers also started to pay more attention to the cultivation of fruit and vegetables because of greater demand from the growing number of tourists and people working at the mining centers of South Sulawesi (Nooy-Palm 1979b: 22).

In the 1980s, pepper was introduced as a third cash crop but it was never grown on a large scale until recently. By the end of the same decade, cacao appeared much more promising in the Torajan highlands and partly even displaced coffee and traditional rice farming (Potter 2000: 249). Despite a lack of government assistance, the rumors of large profits induced people to plant cacao. While cacao trees did not yield as high an output as coffee, and prices per kilogram were lower, cacao cultivation was much easier to handle. In the mid-1990s, vanilla was introduced in the highlands and became another popular cash crop, but it is grown on a much smaller scale than cacao. The vanilla plant yields pods after only two or three years, but usually dies after three harvesting years. The plants are also quite vulnerable and need much care, relatively. By 1996, coffee was still by far the most cultivated cash crop.[7]

Animal husbandry is another livelihood activity in Tana Toraja which is practiced by virtually every household, usually on a small scale. Buffalo, cows, pigs, goats, chickens, and, more recently, ducks are raised. Buffalo and pigs are the most popular animals as they are status symbols and sacrificed in large numbers at funeral and house restoration ceremonies, as are chickens (Kis-Jovak et al 1988: 14). Buffalo meat is eaten and the buffalo hides are exported to Makassar. In addition, the animals are bred for the local and national market.

Tourism offers Torajan people the principal non-agricultural alternative to the narrow range of available government and commercial positions (Morrel 2001). The peculiar character and beauty of the landscape, the extravagant ceremonies of the Torajans, together with a pleasant temperature all year round, hold great appeal for tourists. Tourism in Tana Toraja burgeoned since the early 1970s. Only a few years after the Indonesian government issued its second five-year plan in 1974, which stimulated the development of tourism in Outer Island destinations, the tourist industry in the Torajan highlands was booming. Since then, the number of tourists in Tana Toraja has grown steadily. Hotel registration figures show that in 1996 over 58,000 international and 218,000 domestic tourists visited Tana Toraja (BPS Kabupaten Tana Toraja 1996).[8] Tourism provides opportunities for some Torajans to invest in hotels or restaurants. Others find employment as drivers, guides, servants, or cooks. Moreover, some farmers benefit from the sale of vegetables, eggs, poultry, handicrafts, and even entrance tickets for tourist attractions located in their village.

Regardless of the benefits that tourism has brought to some people of Tana Toraja, most Torajans believe that the bulk of profits from tourism goes to domestic, non-Torajan tour companies headquartered in Jakarta, Bali, and Makassar who have their agents and facilities in the capital of South Sulawesi (Crystal 1989: 159). In addition to the non-Torajan domination of the tourist market, people in and around the town of Rantepao in particular have a sizeable share in this industry. Although recent studies on the influence of tourism on the Torajan livelihood are lacking, it is argued that tourism has had little impact on most of the 75 percent of the Torajan population who subsist as village farmers (Crystal 1989: 159).

In addition to agriculture, animal husbandry and tourism, some 10 percent of the population is employed as civil servants, school teachers, or church officials. Just as in the tourist industry, local shops and the supply industry are largely dominated by Chinese and Bugis people. Local industry and manufacturing have remained fairly small scale and contribute only in limited ways to the wealth of the area. Some small home industry (i.e., the production of handicrafts in mountain villages) exists in Tana Toraja, but in general the only industry in the region can be found in Rantepao or Makale.[9]

The narrow range of jobs outside agriculture, a shortage of agricultural land, limited opportunities for higher education, a constraining social class system, and a money-devouring potlatch system at funeral ceremonies all contributed to a mass migration of Torajans to other regions in Indonesia and beyond. Since the nineteenth century, many Torajans have left their homeland. In the beginning, the transfer of people from the densely populated highlands to the sparsely populated lowlands was closely connected to networks of trade in arms, coffee, and slaves among the ruling elites of the Bugis lowlands and Torajan highlands but remained on a small scale (Bigalke 1981). From the 1920s and (particularly) the 1930s onwards, migration to the lowlands of Sulawesi (Luwu, Enrekang) gradually increased, due to the struggle to pay taxes imposed by the Dutch administration and the expansion of agriculture that reached its limits. The bulk of Torajan migrants, however, left by the 1960s after President Suharto opened Jakarta's doors to foreign investment on Indonesian soil (Volkman 1985: 135). Multinational corporations established themselves in Kalimantan, Irian Jaya, Central Sulawesi and elsewhere to exploit the natural resources of the Indonesian archipelago, providing ample job opportunities. The relatively highly educated Torajans[10] were attracted by the job and income opportunities abroad. The flow of remittances into Tana Toraja is the largest source of income for the region. In fact, 80 percent of the total income in Tana Toraja comes from remittances.[11] In this respect, remittances are an important income-generating source for Torajan households.

Tana Toraja in transition 1997-2003

After more than three decades of steady growth under the Suharto regime, Tana Toraja entered a rapid transitional period in the late 1990s. Several conditions – on which Torajan livelihoods are built – had been affected by the national economic and political crises. How Torajans experienced these changing conditions and reacted to them will be discussed in the following section. First, it is necessary to obtain an understanding of the emergent events that transformed livelihood conditions in Tana Toraja since the late 1990s from an objective (or outsider's) point of view.

In 1998, the growth rate of the regional bruto product (RBP) had dropped dramatically from 9.12 percent in 1996 to -3.38 percent (BPS Kabupaten Tana Toraja: 2000b: 12). By 1999, Tana Toraja had recovered from the economic downfall and the growth rate of the regency slightly increased again, reaching four percent in 2001 (BPS Kabupaten Tana Toraja 2004a). However, in 2003 it decreased once more to 2.29 percent and, to date, the high growth rates of the early and mid-1990s have remained unparalleled.

Because of Tana Toraja's high involvement in cash crop cultivation, its economy was not hit as hard as in other areas of Indonesia.[12] Owing to higher world market prices, and a lower rupiah caused by the Indonesian economic and financial crisis, the rupiah prices of coffee (robusta and arabica), cacao, and cloves skyrocketed by July 1997. By mid-1998, the prices of these crops in Tana Toraja had more than tripled compared to January 1997.[13] In 1999, prices of robusta coffee and cloves dropped again and were almost at pre-crisis levels by the end of 2000. Thanks to its high quality, the price of arabica (at least the Torajan variety) appeared to be more stable and less prone to fluctuation than robusta. By 2002, the price of one kilogram of arabica was still worth twice as much as before the impressive price increases of 1997. The price of cacao also remained more stable until the beginning of 2003, when it collapsed completely. After the heavy price fluctuations of coffee, cacao and cloves came more or less to a standstill, and vanilla prices started to rise enormously in 2002. By 2003, one kilogram of wet vanilla yielded as much as 250,000 rupiah at the local market of Tana Toraja.

Next to the price increases for cash crops in the initial phase of the Indonesian crisis, inflation of the rupiah pushed up the costs for daily necessities such as food, toiletries, electricity, fuel, medicines, and education. Import products such as pesticides, fertilizer, machines, and luxury goods also became more expensive. In 1998, the inflation rate in South Sulawesi province reached 80 percent, compared to 4.56 percent in 1996 (BPS Propinsi Sulawesi Selatan 2000). The inflation ended in 1999 and more or less in the years thereafter.

Beside fluctuating profits for cash crops and costs for daily necessities, the local tourist industry collapsed completely. When violent conflicts spread throughout Indonesia in 1998 and 1999, tourists began to stay away and the number of people visiting the area dropped from 280,000 to about 25,000 in 2001. In 2002, it seemed that tourists regained confidence in Indonesia and started to return to Tana Toraja. However, the blast in Bali in October 2002 marked the collapse for Tana Toraja's tourist industry as well, as tourists avoided the country.

Moreover, thousands of Torajans have returned from conflict areas such as Poso, East Timor, the Moluccas, Aceh, and Kalimantan (Sambas) to the safe haven of Tana Toraja since 1999.[14] In 2002, many migrants also returned from Malaysia, after the Malaysian government introduced stiffer measures to stem the flow of illegal immigrants. According to local records, 391 migrants returned as a result of the Malaysian crackdown, but in reality the numbers are even higher. As one Torajan official explained:

> It is difficult to get accurate data on the number of migrants who returned to Tana Toraja. Torajan people always feel embarrassed if they return to Tana Toraja after failing to succeed where they had migrated to. They do not want to register because they do not want other people to know about their failure.

Finally, the regional parliament of Tana Toraja passed a law that prescribed the reorganization of territories and government structures, aiming at the reestablishment of the *lembang*. The *lembang* symbolizes a geographical area of a group of people that have ancestral origins over generations and who share a sociocultural set of laws and values as well as a traditional form of government organization.[15] The implementation of this far-reaching autonomous unit set in motion the competition for *lembang* leadership among the traditional elites, and some regions became an arena in which the Torajan traditional nobility (living in and outside Tana Toraja) struggled over boundaries, names, and political authority.[16]

The following two sections will show how all these changes affected Torajan livelihoods by narrowing down the focus to the village and household levels.

Sabara: a village in the south of Tana Toraja

Introduction

In the south of Tana Toraja lies the village of Sabara in a broad valley. The valley floor of Sabara is dominated by rice fields which are surrounded by houses that stand in the midst of bamboo and coconut palms. Sabara village is located at an altitude between 900 and 1100 meters and it is populated by around 800 people who live in 166 houses. All rice fields (rain-fed) in the village are in the possession of a small number of families that make up the highest social stratum of Sabara society. Nevertheless, 44 percent of the households in Sabara have direct access to these rice fields through share tenancy arrangements, and most households have at least some access to the rice harvest through different forms of labor arrangements (see table 1.1 for an overview of the number of households involved in the various livelihood activities in Sabara). Because of the rocky soil of the valley, rice cultivation remains limited and there is hardly any surplus for sale on the market. In addition to rice, most inhabitants of Sabara grow vegetables and some cassava (48%) and maize (12%) for household consumption. Next to subsistence crops, as many as 86 percent of the households grow one or more cash crops on small plots of dry fields, usually nearby the house. Robusta coffee is the most popular cash crop grown (71%), followed by cacao (67%), vanilla (59%), and cloves (7%).

Although agriculture is by far the most important source of income in Sabara, cattle breeding adds greatly to the households' income and constitutes a fallback position in times of economic distress. Every household in Sabara raises at least some livestock, such as pigs (92%), chickens (85%), or buffalo (9%). Besides being a source of income and social security, cattle are also raised by some for gifts at funeral, house-building, or wedding ceremonies. Others even rear buffalo for exchange on the market or cocks for fighting contests (gambling). As many farmers lack the resources for large initial investments in buffalo or pigs, a sharing arrangement with a cattle owner or trader is not uncommon.

In addition to agriculture and cattle breeding, Sabara's inhabitants employ several other activities to diversify the household's income. About 17 percent of the households have at least one member who works as a carpenter, bricklayer, or handicraftsman, on a part-time basis, depending on the work supply in or in the vicinity of Sabara. Four percent of the households are involved in small-scale trading of cattle and cash crops. Some households (5%) are more fortunate to have a stable monthly income through government employment.

As local possibilities for employment from agriculture and non-farm activities are fairly limited in Sabara, those in need of a supplementary income have little choice than to leave the village. Consequently, 30 percent of the total population, including men, women, and children, have migrated (semi-) permanently to various places elsewhere in Tana Toraja (40.9%), Indonesia (55.5%), or even abroad (3.6%). Of the surveyed households in Sabara, 35 percent claimed to receive remittances at least once a year (whether in the form of goods, cash, or both). Money and goods are transferred home by post, bank, through family, friends, or acquaintances visiting the village, or brought home by migrants themselves.[17] Especially migrants living and working outside Tana Toraja (such as Luwu, Makassar, Kalimantan, and Irian Jaya) send money home to support their family members for their daily needs (70.6%), for funeral ceremonies (15.6%), or house (re)building (10%). Migrants living in Tana Toraja support their household mostly with labor, or by bringing food or small cash gifts with them upon returning; these are usually not considered to be remittances.

In summary, it can be stated that most households in Sabara obtain a living through raising pigs or chickens in combination with the cultivation of one or more cash crops, which range from coffee (robusta), cacao, and vanilla to cloves. Less than half of these households are involved in rice growing and/or in the cultivation of cassava. One-third of the households receives some remittances from one or more migrant family members. A minor proportion of the households has a regular income through government employment or an irregular income

through business, carpentry, craftwork, and so on, which is often on a part-time basis.

Livelihood portfolios of various wealth groups in Sabara

Considering the above regarding the available livelihood activities in Sabara and the extent to which households employ them, it remains unclear whether particular activities are related to a household's wealth or not. However, to understand whether crisis effects and responses are typical for the village as a whole or correspond to households within a particular wealth group, it is necessary to gain insight into the predominant livelihood activities within each wealth group. This section will compare households belonging to different wealth groups and the way in which they make a living.

Sabara's inhabitants can be differentiated into four wealth classes (very rich, rich, moderate, and poor) that largely correspond to the prevailing social categorization.[18] The first two categories of the very rich (3%) and rich (8%) make up only 11 percent of Sabara's population. The group with households considered moderate comprises 33 percent of Sabara's total population. The remaining and largest group of households (56%) is considered poor. The very rich and rich were often those who own a large amount of land. In fact, they are the only ones who possess considerable acreage of rice fields. The very rich households yield 20-40 *karung*[19] of rice per harvest, while the rich have 5-8 *karung* per harvest. Moderate and poor households depend on access to the fields of the richer people and obtain, thus, obviously less than 5 *karung*. Other determining criteria for wealth are: the state of the house in which the household is living or the *tongkonan* of the forefather(s)/mother(s) they still acknowledge; the children's educational level and current employment and amount of remittances sent home accordingly; and the material assets of a household, such as motorcycles, hand tractors, and rice-milling machines.

The pattern of activities that comprise the livelihood portfolios of the various wealth groups is shown in table 1.1. Considering the involvement in the cultivation of rice, it should be added that the very rich households never buy rice, some rich households do buy rice or supplement their own harvest, and all households of the moderate and poor categories have to buy rice to ensure sufficient food in the household. This leaves the latter two groups of households more vulnerable to fluctuations of rice prices on the local market.

With regard to the cultivation of cash crops and livestock breeding, there is no significant difference between the various wealth groups except that nearly all households of the upper classes are involved in these activities. Although involvement in these activities might not seem to

be a significant marker, the extent of the activities does. The rich own more cash crop trees than the poor because the former have more arable land and investments to plant and look after the trees (fertilizer, pesticides, labor, and so forth). The same is true for the number of cattle that the households in the various wealth groups possess.

Supported by the qualitative information of the wealth rankings, it appears that salaried jobs are associated with wealth. People in the village studied for this paper see government jobs (or rather the regular salary that comes with it) as a means to obtain wealth or at least to secure an acceptable living. A salary makes it possible to invest in agricultural activities while it might also serve as collateral to obtain loans from the bank for more investments or to buy desired consumer goods. Finally, relatively richer households seem to receive financial and material support from migrant members than the poorer ones. Nevertheless, for

Table 1.1 *Households involved in the various livelihood activities per wealth group, Sabara (%)*

Livelihood activity	*Very rich (%)*	*Rich (%)*	*Moderate (%)*	*Poor (%)*	*All groups (%)*
Agriculture					
Rice	100	58	44	40	44
Cash crops	100	92	83	85	86
Coffee (robusta)	100	67	67	73	71
Cacao	100	50	65	70	67
Vanilla	75	75	52	61	59
Cloves	0	25	4	6	7
Breeding livestock					
Buffalo	0	17	4	11	9
Pigs	100	100	92	90	92
Chickens	100	92	85	84	85
Non-farm activities					
Salaried jobs	25	17	8	0	5
Business/trade	0	0	8	2	4
Carpentry/bricklaying	25	8	15	20	17
Migration[1]					
Labor migrants	75	83	67	65	67
Migrants in Tana Toraja	50	42	40	45	43
Migrants in South Sulawesi	50	67	29	24	30
Migrants in other parts of Indonesia	50	58	35	38	39
Migrants abroad	25	0	6	2	5
Remittances	75	58	25	35	35

Source: Survey questionnaire and wealth ranking, conducted in Sabara in 2003

[1] It should be emphasized that some households have several migrant members at different locations.

most of the moderate and poorer households, remittances are a vital source of income to make a living or to cope with crisis or economic distress. The richest families, or those from the highest social strata, generally use remittances for ceremonies to maintain or increase their status.

In conclusion it can be said that most livelihood activity patterns of households across all wealth classes include at least some agricultural activities and livestock breeding. The income from regular employment or magnitude of the remittances seems to be more related to a particular wealth group. The poorer households are characterized by the smaller scope of the activities they undertake. The poorest households mostly rely on breeding pigs and chickens while they try to find some additional income by growing small quantities of sweet potatoes[20] or small vegetables that are sold at the market.

Crisis or a godsend

The following section examines the ways and extent to which the Indonesian crisis influenced the livelihoods and resource allocations of Sabara's households across the various wealth groups. For the number of households that experienced positive or negative income fluctuations, see table 1.2. In all wealth categories, a minor proportion of the households experienced an increase in their income over the five years after 1998. The major reason for this income growth is the exorbitant rise in

Table 1.2 *Households that experience income fluctuations, crises, or positive events (%), Sabara*

	Very rich (%)	*Rich (%)*	*Moderate (%)*	*Poor (%)*
Income fluctuation 1998-2003				
More income	25	17	8	7
Less income	0	17	38	46
Stable	75	64	54	47
Confronted with serious problems/crises 1998-2003				
	25	83	67	84
Facing positive events 1998-2003				
	25	17	8	5
Situation of the household				
Improved	50	36	8	7
Worsened	0	17	29	23
The same	50	47	63	70

Source: Survey questionnaire conducted in Sabara in 2003

the price of vanilla and, to a lesser extent, cacao on the local and national markets. Some families mentioned that the amount of remittances from their family members in Jakarta or Japan increased substantially. As the amount of vanilla grown by households from the wealthier classes is considerably more than that of the poorer ones, it is not surprising that the "first category households" are the ones that profit the most from price increases of that crop. As one respondent from the rich class pointed out, "Thanks to the price rises of vanilla in 2001, our income increased remarkably and we were able to build a new house."

Notwithstanding the rising prices for cash crops, it seems that notably more households had to contend with a drop in income, at least in the three lower wealth categories. In the moderate and poor groups, around 75 percent of these households were afflicted by the long droughts of 1999 and 2002. Because of these droughts, villagers had to delay rice planting for months (making a second crop in this year impossible and extending the periods between successive rice harvests) while the harvest fell short. The harvests of coffee, cacao, and/or vanilla of some of these households were disappointing or even failed as a consequence of the dry soil. In addition to the lengthy dry season, the household income of all three wealth groups appeared to be affected by plant and animal diseases. Every year a fair number of buffalo, pigs, and chickens are struck by disease. Because of superstition,[21] ignorance, or lack of money, most villagers refrain from vaccinating their livestock. Crop diseases are also quite common in Sabara. Especially the poorer households that lack the money to invest in, or the knowledge to use, pesticides often face crop plagues. For the last several years, beginning in 2001, Sabara has been struck by an epidemic that affected most of the cacao trees in the village. Though the fruits look healthy from the outside, the cacao beans inside are rotten.

Another cause for declining household incomes in the moderate and poor classes is the return of family members from the conflict-torn areas of Poso, East Timor, and Ambon in 1998 and 1999. These households face a double burden because the income from remittances abruptly ended while they also had to care for the returnees. Furthermore, some households of the poorest category reported a reduction in income due to a lack of construction work, as many people have refrained from building or renovating their houses in the last few years. One rich household mentioned the shrinking remittances from Kalimantan as a reason for declining income but there is no indication that this is an overall trend in Sabara. Instead, most people pointed to remittances as a resource that enables new investments or that strengthens the fallback position of the household, as these can be utilized in times of crisis. Last but not least, the illness or death of a family member, and the subsequent the loss of labor, has been mentioned by households

across all four wealth categories as another reason for the decline in income. Interestingly, in response to the question whether households faced a serious problem or "crisis" during the period 1998-2003, the number of households that mentioned an illness or death of a family member was lower than those who cited droughts and crop and animal diseases.[22] In general, the serious problems that households identified coincide with the reasons for declining incomes; however, a crisis is not necessarily related to the income of the household (see table 1.2).

Quite a few households from the rich category referred to a serious problem that is worth mentioning in more detail, namely, the theft of vanilla plants and vanilla harvests. Since vanilla prices skyrocketed (following world market prices), vanilla quickly become a desirable crop in Tana Toraja. In Sabara, around 40 percent of the moderate and poor and 25 percent of the very rich and rich households started to grow this crop in response to the price rises. Vanilla seeds became scarce and theft of the plants has nowadays become a new phenomenon in the Torajan highlands. The chopped-off vanilla stems can be planted again while the harvest can be sold on the market. Even within village boundaries, suspicions and accuzations of vanilla theft are becoming more frequent, leading to social distrust and sometimes conflict. Moreover, the high vanilla yields lead to jealousy among those growing cacao or coffee or those whose vanilla crop had failed. Vanilla plants need special care and not everyone has the knowledge or ability to care for the plants. It is no coincidence that especially the richest households in Sabara are plagued by theft because most of them grow vanilla in considerable quantities and started to cultivate the crop before its price began to rise on the market. Most of the poor and moderate households (two-thirds of all vanilla farmers) planted the crop fairly recently and have either no harvest yet or the harvest is rather small. Except for a few households within the moderate class who started to raise silkworms or grow white pepper, the cultivation of vanilla was the only new activity undertaken by Sabara's inhabitants between 1998 and 2003.

The number of households experiencing a positive event is considerably lower than the households confronted with crises (see table 1.2). All positive events of households across all wealth classes had to do with the increasing income households obtained for cash crops (primarily vanilla and, to a lesser extent, cacao and coffee) sold on the market after prices rocketed.

Now that it is clear who and how many households experienced positive or negative changes in their income and livelihoods activity portfolio, the question remains to what extent these changes affected the situation of these households, from its members' perspective. Compared to the households from the very rich and rich classes, fairly few households from the poor and moderate classes experienced an improvement

in their situation (see table 1.2). Not surprisingly, the improvement of the households' situation in all wealth classes is generally ascribed to the increasing prices of cash crops. The deteriorating situation of households in all wealth classes is imputed to the reasons outlined above, namely disappointing harvests, animal diseases, death of family members, and so on. However, households from the moderate and poor classes also emphasized the ever-growing expenditures for daily needs such as food (rice, sugar, salt, fish, etc.), kerosene, toiletries, local transport, children's education, and medicines. For some, the rising costs of agricultural inputs, such as seeds, fertilizer, and pesticides, had a large effect on the household budget. Notwithstanding these sometimes heavy fluctuations that occurred in Tana Toraja in the period between 1998 and 2003, the bulk of the households in Sabara did not experience any notable change in their situation at all.

Kurre: Ceremonies and rice cultivation

Introduction

The village of Kurre is situated northeast of Rantepao which is the main business center of Tana Toraja in the northern part of the regency (see fig. 1). Historically, Kurre is one of the twelve divisions that are integral to the sociocultural organization of Tondon. Throughout the Torajan highlands, Tondon is well known for its organization of extravagant funeral ceremonies and its members' fondness for gambling. The sociocultural and administrative borders of Kurre stretch from the banks of the Banki River towards the mountain ridge of the same name. While the lowest part of the village is located near the river at 800 meters above sea level, at its highest point, Kurre reaches an altitude of 1000 meters. The houses stand in the midst of bamboo on the upland, looking over the rice fields that lie scattered over the lower regions of the village, some on the banks of the river. A total of 148 households comprised of 789 people live in the village of Kurre.

The main activity that people in Kurre engage in to make a living is the cultivation of rice. A few households (all originating from the highest social class) possess rice fields which are irrigated by the Banki River, enabling them to harvest two crops a year. However, the majority of Kurre's population have rain-fed rice fields, yielding only one crop of rice per year. Notwithstanding the unequal distribution of rice fields, both in quantity and quality, 73 percent of the village's households are directly involved in rice growing; this is far more than in Sabara (44%). The majority has indirect access to the rice fields, which takes the form of labor during the plowing, planting, or harvesting season, which in turn brings them a small share of the harvest. Rice is the main subsis-

tence crop and there is rarely any surplus for sale on the market. Besides rice, the daily menu is supplemented by cassava, maize, fruits, and vegetables which are grown in small gardens around the house.

Although the soil in Kurre appears fairly suitable for rice growing, it is less conducive for growing trees or plants as cash crops. Only 27 percent of the households possess a few coffee, cacao, or clove trees or vanilla plants that produce small quantities of harvest. Both coffee and cacao are grown by 19 percent of the households in Kurre. Vanilla and cloves are cultivated by four and three percent of the households, respectively (see table 1.3).

As in Sabara, livestock breeding is a popular activity to generate income in times of economic distress, as well as being very important for gifts at ritual activities. Each household in Kurre raises chickens (98%), pigs (91%), or buffalo (24%). Most young men breed cocks, which they train to fight at ceremonies, gambling dens, or semi-formal gatherings with friends or co-villagers. Fifteen percent of the households have a member who contributes to their income through part-time work as a carpenter, bricklayer or handicraftsman, usually in the slack season. Seven percent of the households are involved in small-scale trading of cattle. After the introduction of the *lembang* system, the village headman and his assistant no longer received their salary from the government and now rely upon a percentage of the taxes levied on ceremonial activities for the slaughtering of buffalo and pigs.

In Kurre, people place much importance on funeral and *tongkonan*-building ceremonies and their livelihood is basically centered upon these extraordinary large events. Due to the high costs of funeral ceremonies and few job opportunities in or near the village, 27 percent of its total population migrated to places outside Tana Toraja to earn money. This means that 81 percent of the households in Kurre have one or more members that have left the village. The majority of the migrants (34%) moved to Malaysia (Sabah and Sarawak) as well as countries such as Singapore and Japan. In Tana Toraja, the Tondon area (including Kurre) is known as a place where a lot of women work as prostitutes in the larger industrial areas of Malaysia. Tondon men are seen as criminals who earn their money in "dark" places (illegal gambling dens, brothels, etc.) in the same areas. In other words, the reputation of Tondon is that of a close(d) community whose people have lost their *ma'siri'* (shame and honour).[23] Outside Tana Toraja, many do their utmost to increase their sociocultural status back home. Other villagers (28%) migrated to other parts of Indonesia, especially Kalimantan and Irian Jaya, or stayed closer to home and moved to Luwu or Makassar (6%), or different locations around Tana Toraja (28 %).

Of all surveyed households in Kurre, 58 percent indicated that they receive remittances from migrant members on a more or less regular

basis. Most migrants who send money home do this to support their family for their daily necessities (77%), for funeral and other ceremonies (65%), and/or for house (re-)building (16%). Just as in Sabara, family members living in Tana Toraja support their home household often with labor, food or small amounts of money.

In conclusion, most households in Kurre are involved in raising chickens or pigs in combination with the cultivation of rice. Only one-quarter of the households grows cash crops (mostly cacao and coffee) on a small scale. Contrary to the situation in Sabara, vanilla has hardly entered the farming scene in Kurre. Beside these local activities, almost 60 percent of the households obtain an additional income through remittances from one or more family members. A small number of households find some income through part-time work such as construction work and small-scale business.

Livelihood portfolios of various wealth groups in Kurre

Just as in Sabara, Kurre's residents distinguish four wealth classes in the same manner: very rich (*paling kaya*), rich (*kaya*), moderate (*sedang*), and poor (*miskin*). However, in Kurre, wealth is even more interwoven with social stratification. Some names of particular social positions in society directly refer to a person's economic status. As a consequence of the closely interwoven social and economic dimensions, wealth in Kurre is measured by the number, size, and price of buffalo and pigs that a household has slaughtered at a funeral or *tongkonan*-building ceremony, as well as by the state of the house (*tongkonan*) of forefathers/mothers from whom a household acknowledges their descent. The number of migrants and the quantity of remittances they send home for ceremonial activities are important criteria for Kurre's dwellers to distinguish the poor from the rich households. Last but not least, physical assets such as rice fields, houses, motorcycles, hand tractors, and rice milling machines complete the wealth mapping exercise.

In Kurre, wealth seems a little more equally distributed than in Sabara. The very rich (11%) and rich (12%) account for 23 percent of all households in the village. The group with households considered moderate make up 29 percent of the population. Almost half of Kurre's households (48%) belong to the category of the poor.

The activities that comprise the livelihood portfolios of the various wealth groups are shown in table 1.3. Almost all households from the top two categories own rice fields, with most of the very rich even having fields irrigated by the Banki River. A lot of households of the third class (moderate) grow rice on the fields of large landowners in return for a share of the yield after the harvest. People from poor households generally work on the land of those who own or rent the land, and are

Table 1.3 *Households involved in the various livelihood activities per wealth group, Kurre (%)*

Livelihood activity	*Group 1 (%)*	*Group 2 (%)*	*Group 3 (%)*	*Group 4 (%)*	*All groups (%)*
Agriculture					
Rice	82	77	65	75	73
Cash crops	45	23	16	31	27
Coffee (robusta)	18	16	9	28	19
Cacao	27	15	10	24	19
Vanilla	9	0	3	4	4
Cloves	0	15	3	0	3
Breeding livestock					
Buffalo	27	46	29	16	24
Pigs	91	92	84	94	91
Chickens	91	100	97	100	98
Non-farm activities					
Salaried jobs	0	0	0	0	0
Business/trade	0	23	13	4	8
Carpentry/bricklaying	0	15	13	18	15
Migration					
Labor migrants	100	77	74	80	81
Migrants in Tana Toraja	82	54	26	31	37
Migrants in South Sulawesi	36	15	13	8	13
Migrants in other parts of Indonesia	55	54	48	20	36
Migrants abroad	55	31	32	47	42
Remittances	91	62	52	53	58

Source: Survey questionnaire and wealth ranking, conducted in Kurre in 2002-2003

paid in rice or money in the harvest season. In general, the members of the first and second wealth groups own land, the members of the third wealth group rent the land through sharecropping, and laborers from the fourth wealth class work the land of the owners and sharecroppers in return for rice.[24] It should be noted that there are some exceptions of poor people owning rice fields or rich people without rice fields.

Across all wealth groups, cash crops are only grown on a small scale. More households (in absolute terms) of the poor category are involved in the cultivation of cash crops, especially coffee and cacao. At first glance, there seems to be no significant difference between the four wealth groups with regard to breeding livestock. However, the number of buffalo, pigs, and chickens that a household raises drops relative to the wealth in each of the categories.

All wealth groups have a fairly high number of labor migrants. Nevertheless, the total number of migrants within households from the very

rich and rich groups is much larger than within the lower wealth groups. Also, the direction of migration differs considerably. Among the poor households, not many migrants remain in South Sulawesi to try their fortune; instead they travel to Malaysia or to other parts of Indonesia such as Irian Jaya and Kalimantan where they are able to make more money without high educational requirements.[25]

Migrants who settle in Tana Toraja usually live in the Tondon region or in the nearby town of Rantepao at the main market (*pasar* Bolu). A few very rich or rich households even have a second house in Rantepao where family members run a little shop or food stall. Most households from the very rich category receive remittances. Of the moderate and poor households, over 50 percent receive money from migrant members. Both the number of households receiving remittances and the amount of money sent are considerable, especially for occasions such as a funeral ceremony.

Crisis, but flourishing funeral ceremonies

Having elaborated on the livelihood activities and resource allocations that predominate within the various wealth groups, this section focuses on the extent and ways in which the Indonesian crisis affected them (see table 1.4). In contrast to Sabara, the rise in income experienced by several households in Kurre between 1998 and 2003 had nothing to do with increasing returns for cash crops. The rising incomes were rather

Table 1.4 *Households that experience income fluctuations, crises or positive events (%), Kurre*

	Very rich (%)	*Rich (%)*	*Moderate (%)*	*Poor (%)*
Income fluctuation 1998-2003				
More income	20	0	7	10
Less income	40	30	14	37
Stable	40	70	79	53
Confronted with serious problems/crises 1998-2003				
	90	75	93	80
Facing positive events 1998-2003				
	55	45	41	19
Situation of the household				
Improved	43	50	29	21
Worsened	14	8	7	3
The same	43	42	64	76

Source: Survey questionnaire conducted in Kurre in 2003

a result of remittances that started to arrive from household members who had found well-paying job in Malaysia, or because of higher returns from rice fields through increasing use of fertilizer.

Households that received comparatively lower incomes specifically attributed the prolonged dry seasons of 1999 and 2002 as the major cause. Households from the upper classes complained about disappointing rice harvests and households from lower groups pointed out the diminishing amount of labor needed on the fields. Several households from all wealth groups said that a large part of their rice crops was affected by infestation of mice and caterpillars in 2002.

Just like in Sabara, the majority of the households in Kurre did not experience any noticeable changes in their income. Nevertheless, it should be pointed out that the income of Kurre's villagers is never completely stable but varies each year to some extent. It is dependent on the amount of rainfall, health of plants and animals, available labor, market prices, and the continuity of the remittances they receive from migrant family members.

Droughts, animal and pest diseases, and sickness and death of household members across all wealth groups seemed as much a crisis for most households in Kurre as in Sabara. Especially various pests and diseases that spread through Kurre in late 2002 killed many chickens and pigs in the village. Strangely enough, most households hardly mentioned this as a reason for decreasing incomes. From each wealth group, one household noted that the cut in remittances was a real crisis. One household from the very rich class said that their vanilla was destroyed, and the land of a household from the moderate wealth group was flooded in 2001. Besides these rather personal crises, there was only one other factor that affected some families negatively: gambling. Since the central government in Jakarta loosened control over Tana Toraja in the late 1990s, the number and size of gambling activities have burgeoned. With formal permission of the Torajan government, some cockfights are allowed at funeral ceremonies as part of a ritual activity but, apart from that, gambling is still illegal. However, according to Morell, "the immediate post-Suharto period saw a resurgence of cockfighting and gambling in Tana Toraja, as advantage was taken of bureaucratic disarray and inattention" (Morrel 2001: 12). Many Chinese, Buginese, Makassarese, and Torajan migrants bring their money from outside Tana Toraja to try their luck in the highlands. They generally gamble to pass the time and losing some money does not worry them much. In contrast to such recreational gambling, quite a few less-well-off Torajans gamble seriously in the hope of boosting their income or paying off debts; these people often return home worse off, causing trouble and conflict in their households. Thus, while gambling might provide a new source of income for some, it causes financial and social

problems as well. One respondent from the poorest wealth class said that from the day her husband gave up gambling, she noted a positive effect on their household's income.

The positive experiences or events between 1998 and 2003 singled out by respondents once again make clear the importance of migration and remittances for Kurre. The majority of the households viewed the graduation of their children from high school and the employment they found after that and the remittances they consequently sent home as positive events. Their children have become successful (*keberhasilan*), which allows them to invest even more in funeral ceremonies to show their enhanced wealth and thereby increase their social status. Children's success in obtaining a well-paid job is also the major reason mentioned for the improvement of the household's situation. The other positive events cited match the reasons for increasing incomes: the sale of cattle, and higher profits for rice and cacao harvests.

Interestingly, only a small minority of households felt that they were worse off after 2003 than five years before that. The ones experiencing a poorer situation in their household gave the rise of prices for cooking oil, petrol, food, transport, and fertilizer as the main reason. Although a majority of households in Kurre acknowledged the increase in prices for food and goods, most of them commented, "There is no crisis in Tana Toraja because the funeral ceremonies are still flourishing."

Concluding remarks

The Tana Toraja case demonstrates that the livelihoods of some people have turned upside down, while those of others have changed very little, or actually have changed for the better. It also shows that local livelihoods are subject to risks, threats, and opportunities even without the influence of external shocks; rural people live in a vulnerable environment and are regularly faced with crop and livestock diseases, droughts, floods, forest fires, and so forth. The local economy is still lively and remittances continue to arrive in Tana Toraja from Kalimantan, Irian Jaya, and even Malaysia. The Tana Toraja economy depends in large part on the money that continues to flow into Tana Toraja for funeral or house-building ceremonies or just daily needs. Translocal or transnational networks appear to be important for establishing and maintaining a livelihood as well as for enhancing and securing a livelihood in times of crisis. Most people do not live in isolation but are part of local and transnational networks of social relations (kin and friends), which might help them to cope with unexpected setbacks or to make use of new opportunities.

As postulated in the introduction of this book, a nationwide response to the Indonesian total crisis does not exist; nor is there an ethnically shared response to the regional emergent events that spread throughout Tana Toraja (as an expression of the Indonesian crisis). In the study of livelihoods and their resilience in times of change, the Torajan case provides a clear example of the necessity to differentiate between households and larger social units or classes, while taking life objectives, past experiences, and contextual aspects as well as translocal relations into account.

Notes

1 Data for this case study was collected during an extensive period of field research in 2002-2003 and two shorter visits to Tana Toraja in 2001 and 2005. A variety of data collection methods and techniques (e.g., in-depth interviews, oral histories, surveys, rankings, mappings, etc.) has been used to gather information on the crisis effects over the period 1997-2005, at different levels of society. The cases presented here served as sample villages within my research in the northern and southern parts of Tana Toraja. The field research on which this paper is based was part of the Indonesia in Transition research program of the Royal Netherlands Academy of Sciences (KNAW).

2 The names of the villages in this study are pseudonyms.

3 There are various spellings for the name of the people from Tana Toraja. The more common ones are Toraja, Toradja, and Toraya. According to Torajan linguistics at the Christian University of Tana Toraja (IKIP), within the English language the term Torajan should be used to refer to someone who originates from the Tana Toraja region. Accordingly, for the purpose of this work, I apply the term Torajan to refer to the people from Tana Toraja.

4 The Indonesian census in 2000 arrived at a figure of 750,828 Torajans living in Tana Toraja (Suryadinata et al 2003: 7). This means that around 350,000 Torajans live outside Tana Toraja, at least according to the official accounts. In reality the number is much higher if we include the non-registered migrants and commuters or the Torajans who live overseas. It is estimated that about 50,000 Torajans reside in Malaysia.

5 Nearly 80 percent of the Christians are Protestants, while 20 percent are Catholics (BPS Kabupaten Tana Toraja 2001). The number of people practicing Pentecostalism is growing steadily, but there are no official figures.

6 In 1970 the rice harvest yielded 40,000 tons (Nooy-Palm 1979a: 12), while the rice harvested in 1996 amounted to 133,559 tons (BPS Kabupaten Tana Toraja 1996), which is more than a threefold increase.

7 In 1996, 13,033 hectares were planted with coffee yielding 5,078 tons of coffee; 3,037 hectares with cloves (110 tons); 904 hectares with cacao (733 tons); 277 hectares with vanilla (57 ton); and 33 hectares with pepper (8 tons) (BPS Kabupaten Tana Toraja 1996).

8 This official number is probably a little on the high side because it also includes Indonesian guests, such as traders, politicians, and NGO members attending conferences and workshops, and occasional Torajan migrants with their families who prefer to stay in hotels while partaking in ritual activities.

9 Rantepao is the main business and Makale the main administrative center of the regency.

10 "Tana Toraja possesses the finest educational system in all of rural South Sulawesi. Developed over half a century by missionaries, Toraja Protestant and Catholic schools have produced high caliber high schools and technical school graduates whose skills have been utilized in government service, the armed forces, and private industry" (Crystal 1989: 165).

11 This number is based on an interview with the editor of a local newspaper who investigated the money flows into Tana Toraja through banks, post office, and so forth.

12 Indonesia's gross domestic product shrank in 1998 with 14 percent far below zero (Gérard and Ruf 2001: 3).

13 The contribution of cash crops to the regional bruto product (RBP) of Tana Toraja more than doubled from 9.95 in 1996 to 19.73 percent in 1998 (BPS Tana Toraja 2000b). The increase in the share of agriculture to the RBP of Tana Toraja (52.46 percent in 1996 to 62.23 percent in 1998) seemed to be entirely due to the growing production of cash crops and rising market prices for these crops.

14 By 2002, as many as 7,588 Torajans had registered themselves as return migrants (Dinas Kependudukan dan Tenaga Kerja Kabupaten Tana Toraja 2001/2002).

15 To some extent the traditional ethnic concept of *lembang* can be compared with the more widely known *nagari* in West Sumatra. The *lembang* is a political and administrative unit which is larger than the New Order village (*desa*) and supposedly existed before the Dutch colonial regime administratively redesigned the region.

16 For more information over the implications of decentralization and power politics in Tana Toraja see De Jong (forthcoming).

17 Migrants usually visit their home village during holidays (usually Christmas) or to attend funeral, house-building or wedding ceremonies.

18 In order to construct the four wealth categories, I used an emic approach. Six groups of people from various socio-economic backgrounds and a mixture of different age groups were asked to place the name cards of all households in the village into different piles, according to their wealth. In all six exercises, the respondents ended up with four rows of households: very rich, rich, moderate, and poor. It seemed that the first and second categories were more obvious than the distinction between the moderate and poor. The criteria utilized by the villagers for distinguishing households provided information on the importance of access to certain resources and activities for securing or enhancing a living. The average of the total six wealth rankings has been used as the determinative factor for a household's position in a particular wealth group.

19 *Karung* means "sack", and corresponds to approximately 100 liters.

20 In Tana Toraja sweet potatoes are usually boiled and added to a mixture of rice and bran to feed pigs.

21 A few years ago, one farmer in Sabara decided to vaccinate his pigs. Soon thereafter, they all died. After that people doubted the benefits of what they consider "expensive injections".

22 Sickness refers to serious illness for which hospitalization is needed, or something that resulted in incurable disability. Death not only implies a shortage of labor but also brings with it the high costs of a funeral ceremony, even though the rituals might be kept relatively small scale.

23 Although there may be some truth to this reputation, one should be careful not to overgeneralize; I came across several migrants who earned a living through a highly valued job.

24 Land division in Kurre (as well as in most other places in Tana Toraja) is very complicated. Most land, especially rice fields are divided at funeral ceremonies among consanguineous relatives of the deceased person. The amount of land inherited usually depends on the number and value of buffalo they sacrifice at the ceremony. Because of the many divisions and redivisions of land, many households own several small

plots of rice fields of different quality at various locations. The rice fields usually remain the property or common wealth of the *tongkonan* and are therefore seldom sold. In the past, all rice fields belonged to people from the highest class. A thorough division of land has never taken place in Tana Toraja, thus denying most low-status households (usually from the poorer stratum) access to rice fields. Most villagers retain ownership of their land even after they have migrated. However, in return for a share in the harvest or cash, others are usually allowed to work on such plots.

25 Migrants of the poor and moderate wealth groups generally have a lower level of education than their richer co-villagers and accordingly find different employment.

2 Through Turbulent Times: Diversity, Vulnerability, and Resilience of Madurese Livelihoods in East Kalimantan

Gerben Nooteboom

For some categories of people in Indonesia, and probably in Southeast Asia at large, the 1997 economic crisis, the related political turmoil, and the sociopolitical changes in its aftermath have led to a reshuffling of positions, with some groups experiencing a gain in livelihood conditions and access to resources, and others merely losing. An increasing number of studies on social change and the long-term effects of the crisis indicate, for instance, new opportunities and a rise of old elites as well as a recovery on the part of formerly suppressed groups (Antlöv 2004; Rosser, Roesad & Edwin 2004; Van Klinken 2002). At the same time, some of the groups that previously were relatively protected under Suharto's regime are losing out. Old and regional elites, such as *adat* officials and some Islamic leaders, are now riding the waves of opportunity, while the rural and urban poor, unskilled laborers, and marginalized migrants face declining political influence, decreasing economic opportunities, and a lack of social protection (Bertrand 2004; SEMERU 2004; Wanandi 2002).

This process of reshuffling has mostly been taking place along ethnic lines, although large differences within ethnic groups can be observed. Since the crisis has shaken society's social, economic, and political structures, some groups are doing better, while others lose influence and access. In Indonesia, ethnic Chinese, for instance, now celebrate their escape from the doldrums of discrimination (Susanto 2005), *adat* elites return in West Sumatra (Indiyanto 2004), and Malay and Javanese Islamic middle classes also prosper under this period of political windfall (Rutten 2005). On the other hand, migrants of poor and less privileged backgrounds such as Madurese and people from eastern Indonesia (NTT) face stagnant or deteriorating positions as a direct or indirect effect of the crisis (Mathews 1998; Suryahadi & Sumarto 2003; Vel 2001). Some of these ethnic groups, which occupied relatively privileged positions during New Order rule as migrants or laborers, now seem to lose out. Little is known, however, about the multiple impacts of the crisis on livelihoods within such marginalized groups and the mechanisms of interpretation and reallocation of these changes at the local level.

In an attempt to understand the background of this reshuffling of positions, it is illuminating to look into the differential effects of the Indonesian crisis on the livelihoods of such groups as one of its prime causes. This chapter aims to shed some light on the micro processes of livelihood change among Madurese migrants – one of the less privileged groups in Indonesia – and analyzes aspects of livelihood and vulnerability to crisis in a wider economic, political, and social perspective. For this purpose, I distinguish three crises which are mutually entangled in practice: (1) an economic crisis (marked by inflation, a loss of labor opportunities, and declining income earning opportunities); (2) a political crisis that led to a weak state, the erosion of protective structures, and unbalanced decentralization; and (3) a social and ethnic crisis which gave rise to increasing ethnic and religious tensions leading to violence, trauma, and fear. The 'echoes of violence' had by far the largest impact on Madurese migrants in East Kalimantan and this group will receive the most attention here.

It is difficult to specify the direct causal relationships between the violence and ethnic conflicts in Indonesia (during the years 1998-2001), the economic crisis and the changes at the political level, due to the complexity of developments in this turbulent period. Nevertheless, the large number of studies on violence shows that economic crisis, regime collapse, and violence are interrelated and have influenced each other (De Jonge & Nooteboom 2006). Explanations of the violence against Madurese in West and Central Kalimantan for instance ranged from: exotic explanations relating to "headhunters" and "savages" (CNN 1999; *Jakarta Post* 2001; *New York Times* 1999) to errors of the past three decades, such as forced migration of hundreds of thousands of people from densely populated islands such as Java, Bali, and Madura to less populated islands without proper integration of these migrants with native groups in the settlement areas (Ave 2003; Dove 1997; HRW 1997; Peluso & Harwell 2001); and, further, the political heritage of suppression under Suharto's New Order (Davidson & Kammen 2002); the political instability after his fall (Davidson 2003; Putra 1999); a failing justice system and probable political manipulation by Indonesian authorities (HRW 1997; ICG 2001; Schiller & Garang 2002); and deeply rooted cultural and religious controversies (Schiller & Garang 2002). Van Klinken put his analysis in a context of decentralization and blamed local ethnic elites "who deflect democratization by stimulating ethnic conflict" (Van Klinken 2003: 70). In retrospect, these studies taken together provide a fairly convincing explanation for the violence in West and Central Kalimantan, at least from the Dayak point of view. The Madurese perspective so far has been poorly represented, and their position has received less attention (Nooteboom 2005b). Moreover, we do not know what the effect of the violence has been on Madurese mi-

grants in other areas, such as neighboring East Kalimantan, where no large-scale violence occurred.

In an attempt to fill this gap, this chapter deals with the study of one of the categories of people who are among Indonesia's most marginalized groups: Madurese migrants in East Kalimantan. Two questions will be investigated in this chapter: what impact did the different types of crises have on the livelihoods within different categories of Madurese migrants in East Kalimantan, and what were the mechanisms through which these different impacts of the crisis periods affected Madurese livelihoods? To answer these questions, I will first give some historical background on Madurese migration, then I will describe Madurese livelihoods in East Kalimantan, and finally I will deal with the major impact of the crises and the mechanisms through which they affected Madurese livelihoods.

Research locations and methodology

This chapter is based on material gathered during a larger study on livelihood and social security styles of Madurese migrants in East Kalimantan in the context of crisis and decentralization in Indonesia. It builds on previous fieldwork among Madurese-speaking people in Bondowoso, East Java (Nooteboom 2003; Nooteboom & Kutanegara 2003), an area from which many people migrate to Kalimantan. Fieldwork was carried out in January 2003 and from September 2003 to February 2004 in the district of Samarinda, the provincial capital of East Kalimantan. I studied Madurese settlers in three clearly demarcated clusters of economic activity: brickmaking, stonecutting, and vegetable production. The first two sectors are dominated by Madurese from Bangkalan (West Madura) and Sampang (Central Madura), respectively. Most brickmakers work on the outskirts of the city and stonecutters can be found in the hills of Batu Putih and Batu Besaung, west and north of the city of Samarinda (see map). In the vegetable production area of Lempake (northeast of Samarinda), Madurese-speaking migrants from Malang (East Java) dominate economic activities.

Within these relatively homogeneous clusters of economic activity (in respect of place, descent, social class, and ethnic identity), I observed a wide range of different ways in which people tried to make a living, interpreted the crisis, maintained contacts with other ethnic groups, and aimed for "success".

The research consisted of both quantitative and qualitative methodologies and comprised three phases with an increasingly narrowing scope. In the first phase, the different economic activities, locations, and backgrounds of Madurese migrants were mapped. After this phase,

two sectors dominated by the Madurese were selected. In the second phase, a large-scale survey was conducted on livelihood constitution, livelihood patterns, incomes, remittances, social security, perceptions of crisis, and interethnic relationships. In the last phase, a dozen families from the first and second phase were again approached for lengthy interviews and life histories. These families were visited on a weekly basis and they were studied more intensively to constitute case studies.

Some members of these families were traced back to the island of Madura and family members were visited in Bangkalan, Madura. In practice, the second and third phases overlapped, as case studies started when the survey was still running. In total, 79 brickmaking families and individual workers were surveyed, as well as 45 stonecutters, 20 farmers, and 10 contractors. Besides these, Dayak, Bugis, and Javanese key informants were interviewed, as well as members of the police and the administration.

Madurese migration

A short history of Madurese migration

For centuries, the Madurese have been known as brave soldiers, strong and reliable laborers, and vigorous migrants traveling to many places in the Malay world. There are indications that as early as the thirteenth century, the Madurese traveled and settled in Java as serfs and rural laborers (Husson 1997). From the sixteenth to the nineteenth century, Madurese soldiers, recruited by Javanese and colonial authorities (VOC), were a feared force and crucial instrument in the power play of kings and rulers (Husson, 1997). Many of them were rewarded for their military services with land in East Java.

Since the seventeenth and eighteenth century, large numbers of the Madurese have moved to the mainland of Java, and especially to its northern coast and the eastern part (Cribb 2000; Nooteboom 2003; Tennekens 1963). Husson (1997: 85) quotes Van Nes (1832) who wrote that, by 1832, the residency of Pasuruan (on the mainland of Java) had a population of 170,049 Javanese and 92,463 Madurese. This migration increased in the late nineteenth century and throughout the twentieth century, when many Madurese laborers were sought to work in plantations in the Malang and Besuki districts and in the expanding factories of Surabaya (Nawiyanto 2003).

Although the migration wave to plantations abated, the Madurese still continued to migrate elsewhere. In the population census of 1930, 14 percent of all people born in Madura were living in other parts of the archipelago (Cribb 2000). According to some sources, the population on the island of Madura even declined in the period between 1940-1950

(Husson 1997: 89). Major factors behind this massive migration, which has continued to the present day, are the infertility of soil on Madura, a lack of natural resources and labor opportunities, overpopulation, and the widespread belief that economic success can be achieved only by migration (*merantau*).

Since the year 2000, the Madurese have been officially ranked as Indonesia's fourth largest ethnic group, with 6,771,727 people, or 3.37 percent of all citizens (BPS 2001; Suryadinata Arifin & Ananta 2003). Other estimations give even higher numbers for the Madurese and rank them as the third largest ethnic group (Husson 1997). Nowadays, less than one-third of these Madurese live on Madura. Ninety-eight percent of the Madurese live in East Java, where they comprise 18.1 percent of the provincial total.

There has been a Madurese diaspora, mainly to Kalimantan, which is relatively near and offers many opportunities for unskilled laborers. According to official data collected in 2000 (BPS 2001), about 4.92 percent of counted self-identified Madurese citizens live in Kalimantan (the proportions are 5.5 percent in West Kalimantan, 3.5 percent in Central Kalimantan, 1.22 percent in South Kalimantan, and 1.24 percent in East Kalimantan). These figures do not include temporary workers, those who regard themselves as temporary, or those who wish to avoid calling themselves Madurese, as these figures are based on ethnic self-definition, and temporary workers without a residential permit are not included in the statistics. Real figures of the Madurese in East Kalimantan are therefore expected to be much higher.

Madurese migration to Kalimantan

It is difficult to find exact figures of Madurese migration to Kalimantan, since figures about ethnic descent were not provided by Indonesian statistics. It is clear, however, that the first considerable numbers started to migrate shortly before World War II when work opportunities in Kalimantan in the oil industry, plantation sector, and logging industry started to gain importance (Harjono 1988). The Madurese were the most popular cheap and reliable laborers and they were probably also part of the first Dutch transmigration (at that time called colonization) projects in 1921 in Kalimantan. In 1938, the settlers in the Madurejo dry land transmigration area in South Kalimantan were all Madurese (Harjono 1977).

Contrary to what has generally been said, the Madurese were seldom part of these large-scale transmigration programs and the majority of Madurese migrants came to Kalimantan of their own accord. The major waves of Madurese migrants came after the oil boom in the mid-1970s. They took their cue from the new labor opportunities and their migra-

tion was only indirectly stimulated by the transmigration programs. The importance of the transmigration programs has probably been that they opened up new areas, provided infrastructure, and prepared the way for spontaneous migration of the Javanese and Madurese, as well as Buginese, Banjarese, and Torajans.

When the numbers of immigrants in Kalimantan increased dramatically, frictions with the local population and with other migrant groups regularly occurred. Due to strong military repression under Suharto's New Order, these frictions were never able to develop into large conflicts, and migrants, especially from Java and Madura, were generally well protected. In the early 1990s, however, the success of the New Order developmental model started to show cracks. Local groups in the outer islands started to contest the Jakarta and Javanese-based domination and expressed their resentments more openly. The (often corrupt and internally divided) police and military forces were no longer able to stop ethnic and religiously inspired clashes between migrants and ethnic Chinese. Widespread and repeated looting and ethnic violence in Java (against the Chinese), the Moluccas, Central Sulawesi (Poso), and in the outer islands (against the Madurese and Chinese) were one of the first indications of the shortcomings and weaknesses of the Indonesian New Order political system that suppressed tensions rather than solving them (Antlöv 1999; Breman 2000; Hill 1999).

In 1999 and 2001, when government legitimation had severely declined due to the political crisis, large ethnic conflicts occurred in Sambas and Sampit (West and Central Kalimantan).[1] Most of the Madurese in these districts originate from the Sampang and Pamekasan districts of Madura and from the eastern districts of East Java.

In East Kalimantan, however, the situation is slightly different. Most of the Madurese who migrated to East Kalimantan originated from Bangkalan, with smaller proportions from Sampang and the Eastern Salient of Java. Generally they do not own land and work as unskilled laborers for logging companies, in road construction, for contractors, and in the plantation sector. Nowadays some have been able to start small or medium-sized businesses, but the majority remain poor. Migration patterns of the Madurese in East Kalimantan differ in this respect from those in West and Central Kalimantan, as in the latter area, large numbers of the Madurese settled in rural areas and obtained land (Peluso & Harwell 2001).

Madurese migrants in Samarinda

It is difficult to ascertain when exactly the first Madurese came to Samarinda. Of the Madurese currently living in Samarinda, those living there longest came to town in the early 1960s. They worked as un-

skilled laborers and, at least from the mid-1960s, a few Madurese brickmakers have been active. Before that period nearly all houses were made of wood and occasionally the Madurese were reported to be working as carpenters or traders. When, at the end of the 1960s, large transmigration schemes were established in Samarinda, the Madurese found work in road and house construction, in logging, and in the construction of irrigation dikes, canals, and ditches.

After 1970 the situation started to change. Employment opportunities grew, large transmigration areas around the city brought larger populations, and Samarinda started to develop as a provincial city. In this period, logging activities in the vicinity of Samarinda also increased, a large number of sawmills were opened along the Mahakam river, government buildings were put up, and the demand for unskilled laborers for road construction and building activities increased sharply. Moreover, the demand for gravel, stone, bricks, and building materials skyrocketed and newcomers, many of them Madurese, grasped the opportunities to start a trade or business.

Nowadays, the ethnic chart in economic activities is as follows: the Javanese dominate farming in the transmigration areas as well as the middle and higher ranks of the service sector, in government bureaucracy, and in education. Buginese immigrants from Sulawesi dominate petty trade and transport, as well as the large trade in wood, vegetables, and fruit; they own restaurants and some of the large production enterprises. The Banjarese are farmers, factory workers, and owners of many small shops and restaurants. The Kutai, the original population, can be found in agriculture, business, and higher ranks of government personnel. The Chinese are in the majority in the retail and supply sector, own most of the larger shops in town as well as many sawmills, and they dominate the capital-intensive branches of the economy. Most Dayak people of East Kalimantan are found in the faraway forests of the upper Mahakam, and in the Berau and Nunukan districts. Nowadays, the Madurese make up an estimated 5 percent of the population of Samarinda and 3.6 percent of East Kalimantan as a whole.[2] This makes them the sixth largest ethnic group in East Kalimantan, after the Javanese with nearly 30 percent, the Buginese with 18 percent, the Banjarese with 14 percent, the Kutai with 9 percent, and the Dayak with an estimated 5 percent (BPS 2001; Suryadinata et al. 2003).

Some of the early Madurese are now well-off and own land, houses, cars, transport businesses, recycling firms, construction companies, gambling dens, and brothels. They earned their fortune during the late 1980s and 1990s when the economy of Samarinda was booming as a result of the increase in logging and mining activities. The majority of the Madurese in Samarinda, however, have so far not been very successful and remain poor. They are not highly educated (with illiteracy rates

of 40 to 50 percent for male workers and even higher percentages for women), but are known for being hard workers. This means that they are higly desirable in demand as laborers in sectors where hard labor is required, such as in the transport and construction sectors. Many porters in the harbor and at the markets are Madurese, as well as road workers, construction workers, garbage collectors, stonecutters, and brickmakers. Others work as security guards, policemen, carpenters, owners of repair shops, or hairdressers and barbers. The banana trade and *saté* sector are dominated by the Madurese, as well as the majority of the canteens at the university campus. In general, however, Madurese migrants remain in the lower strata of the East Kalimantan society.

Four types of migrants

In East Kalimantan, four categories of Madurese migrants can be distinguished: seasonal migrants, semipermanent migrants, semipermanent settlers, and settlers.

1) *Seasonal migrants* travel seasonally to and from Madura or Eastern Java. They make up 40 to 50 percent of the brickmakers or stonecutters in Samarinda and a large proportion of the laborers at construction sites. Over three-quarters of them are male, and the others form mostly couples without children. Preferably, they leave their dependants with relatives in Madura, where life is cheaper and perceived to be safer. As soon as some money has been earned, they send it to family members or return home (savings from Rp 1 to 2 million (€ 100-200) are considered as enough to return). These seasonal migrants work as wage laborers in construction, agriculture, brickmaking, and stonecutting, and are mobilized by Madurese middlemen. They come from mainland East Java or from Sampang and Pamekasan in Madura (including refugees from West and Central Kalimantan) and travel to Kalimantan by boat. Their length of stay ranges between three months to a maximum of two years. These workers have the lowest incomes (gross individual and family wages average between Rp 15,000-20,000 (€ 1.50-2.00) per day), which is still twice as high as what can be earned on Madura or mainland East Java. It should be realized, however, that the prices for basic goods in East Kalimantan are about 50 percent higher as well.

2) *Semipermanent migrants*. Among the brickmakers and stonecutters in Samarinda, about one-third have worked in Kalimantan for over 20 years and they still return home nearly every year at *Idhul Fitri*. These people can hardly be called seasonal migrants any more, as they have lived most of their life in Kalimantan and only travel to Madura for short periods in a year. Every year, as soon as their savings are used up in Madura, they return to Kalimantan. Nevertheless, they regard themselves as living on Madura and as only temporary dwellers in Kaliman-

tan. Some of these people own houses and sometimes cattle at home on Madura and try to invest in them, but the majority have never been able to accumulate any substantial property.

Average incomes of semipermanent migrants are often higher and more stable than those of the seasonal migrants, but their economic activities remain "footloose". They work as wage laborers, sellers, or traders, and those who have been successful tend to invest their savings mainly in Madura by buying land, cattle, a motorbike, or improving their houses. Every year at *Idhul Fitri* they try to go home and visit relatives and children living on Madura (girls tend to remain on Madura to care for parents, and if enough money is available boys are sent to an Islamic boarding school (*pesantren*) in the home area). If possible, the semipermanent migrants send their remittances regularly to family members, parents, and relatives in need of support or a loan. Semipermanent settlers differ from semipermanent settlers by their self-definition as a migrant (*perantau*) and their preoccupation with Madura as place of original descent and final retirement. Many of the semipermanent migrants began as seasonal migrants and never intended to work very long in Kalimantan. They feel "forced to migrate" and tend to explain their presence solely in terms of economic necessity; "there is nothing [to earn] on Madura".

3) *Semipermanent settlers* can be quite successful. Some own profitable businesses or trades and among them there are many entrepreneurs, owners of brickmaking sites, subcontractors (*borongan*), and transporters. If money is available, they tend to visit Madura infrequently. Among the semipermanent settlers are also people who are unwilling or unable to return to their place of origin for a variety of reasons, such as an unpaid debt, feud, or "trouble". Usually they are couples – often with children – or remarried couples who have started a new working life in Kalimantan. Successful semipermanent settlers remit money regularly to support parents or relatives in Madura, but they tend to invest in Kalimantan (in enterprises, trucks, land, social relationships, and so on). As the years go by, ties with Madura get weaker, and if most of their children prefer to live in East Kalimantan they never return. Nevertheless, they all say they long to go back to Madura and they tend to maintain a home there. These houses are used by relatives and sometimes fall into disrepair due to neglect. Semipermanent settlers want to make money in Kalimantan, where "money is cheap", but still dream of or plan a retirement at "home". In practice, few dreams ever materialize. Following the Central Kalimantan violence of 2001, this dream has gained another dimension. Most of the semipermanent migrants admit that their attitude towards Kalimantan has changed. They no longer feel safe and long for a peaceful retirement. They doubt whether they can ever live safely in Kalimantan.

4) *Settlers* have simply chosen to stay in Kalimantan and do not wish to return for a variety of personal, social, and economic reasons. They do not own any property on Madura, or have sold their land and house lots. For their adolescents, they have established Islamic schools (*pesantren*) in Balikpapan and Samarinda. Among the permanent settlers there are many who have lived there for two or three generations. They do not feel special affection for their homeland and regard themselves as natural inhabitants of the province. However, outsiders still view them as distinctively Madurese.

Families of settlers live dispersed over Samarinda, except for a few clusters where brickmakers and settlers bought land in a kind of "chain". The children of settlers tend to go to primary schools in the neighborhood and education levels are higher than on Madura. Sometimes these children are even unable to speak Madurese. Settlers do not wish to return and generally no longer own anything in their area of origin. If they send any remittances, these are for emergency purposes of faraway relatives or have a further symbolic function, such as the building of a mosque or religious school. Following the violence in West and Central Kalimantan, many settlers have tried to mix or assimilate with other population groups and tend to disguise their Madurese descent. Returning to Madura would not have been an option due to a lack of property and social relationships.

The seasonal migrants and semipermanent migrants make up three-quarters of the Madurese in East Kalimantan. These categories of migrants do not necessarily reflect social class, as especially in the third and fourth category rich as well as poor people are found. Over 90 percent of first-generation Madurese in East Kalimantan retain close ties with their area of origin. News about family members and events in Madura is constantly exchanged. This connectedness with Madura is one of the reasons why the Madurese maintain their distinct ethnic identity. It is the important cultural notion of wandering or traveling (*merantau*) in search for money, rather than "settling", that makes the Madurese move away from Madura. Initially they all wished to return and this idea of *merantau* did not motivate them to invest in Kalimantan or to buy land. Only a few ever invested in land or immovable property. This practice has been reinforced since the violence in West and Central Kalimantan, when fear for further ethnic violence spread, and more Madurese tried to accumulate property on Madura.

Madurese livelihoods

In this study, I have focused on three economic sectors of Madurese migrant activity: brickmaking, stonecutting, and vegetable farming. The

first two groups have been studied most intensively as they are highly visible and known to be Madurese, while the last sector has been studied by means of comparison.

Laborers in the brick sector live a squatter-like life in simple bamboo houses on pieces of unused land, and can be found clustered along most of the roads outside Samarinda. Madurese stonecutters can be found in Batu Putih and Batu Besaung, a range of rocky hills to the west and north of Samarinda. The third group of vegetable farmers are hardly known as Madurese and can be found north and northeast from Lempake (see fig. 2.1). They invest in land, fruit trees, cattle, and brick houses.

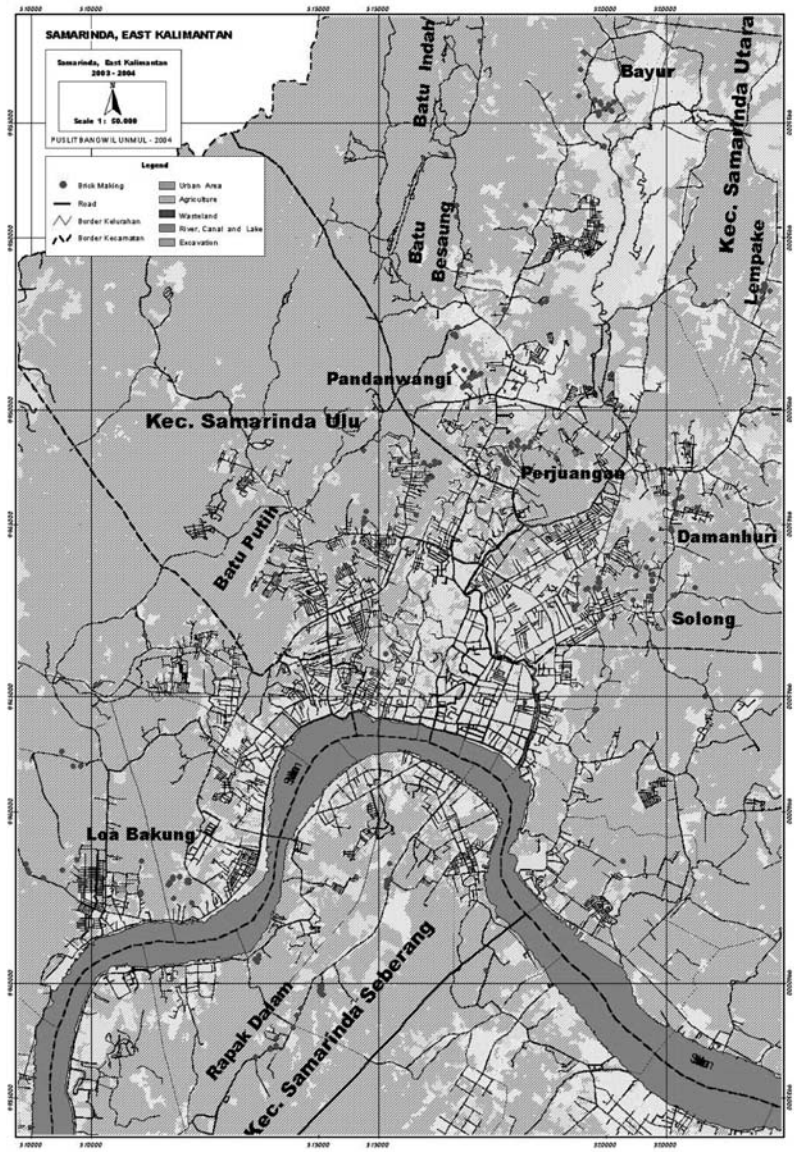
The rough sector: brickmaking

In the 2003-2004 survey, my assistant and I found a total of 350 brickyards (*serobong*) providing a livelihood for an estimated 1,400 families.[3] A *serobong* usually consists of a simple barn where bricks can be dried and fired. Around the *serobong*, excavations, molding tables, firewood, and simple barracks can be found. The land is usually rented or leased to produce bricks. Only 15 percent of the entrepreneurs own the land on which they work.

The average age of the brickyards surveyed was 4.7 years. *Serobong* are regularly transferred to other locations when the clay is finished, when conflicts occur, when lease contracts are terminated, or due to house or road construction. Only when the land is owned by the owner of the brickyard can enterprises remain longer in the same place. During the last two decades, brickyard locations slowly moved from the outskirts of the older city to outer areas as a result of Samarinda's ongoing urbanization.

About 40 percent of these brickyards were family-owned enterprises without laborers, while the other 60 percent employed an average of six laborers. Most enterprises are small and consist of one wooden shelter (*serobong*) for drying and firing bricks, a few basic barracks for the workers, and some simple production tools such as shovels and molds. On average, each *serobong* has three teams of workers. A team, or *kongsi*, includes a husband and wife or two male workers. Many of these workers are heavily indebted to the owner of the brickyard and can only return to Madura when debts have been repaid. These forms of bonded, debt-laden labor occur in about half of the cases. Sometimes couples bring their children along, but more often the latter stay (and, in 75 percent of the cases, so do their spouses) on Madura. Notwithstanding the simple production techniques, an estimated 50 million bricks were produced in 2003 in the Samarinda District, and about 3,500 people were dependent on brickmaking as their first source of livelihood.

Figure 2.1 *Map of Samarinda, East Kalimantan*



Ninety-two percent of the brickmaking entrepreneurs as well as 58 percent of brickmaking workers come from Madura. Eighty percent of the entrepreneurs and 39 percent of the workers come from one village, Geger, in the Bangkalan District, West Madura.[4] Another 19 percent of the workers come from other areas in Madura, while the other 40 per-

cent of the workers originate from Madurese-speaking areas in East Java, with the largest proportion coming from Bondowoso (32 percent).

Although there are significant differences in speech and culture between people from Madura and eastern Java,[5] other ethnic groups in East Kalimantan view brickmaking as an exclusively Madurese occupation. It is called the "rough" sector, "only suited for strong, hardworking people who can stand it" and for people who are not "refined" enough to work in other sectors.

The economic activities and the ethnicity of the workers in the brick enterprises are highly visible. Brickmakers are widely known to be Madurese and their activities involve excavations, smoke, and regular heavy transportation, which cannot be hidden. Entrepreneurs in this sector face uncertainty due to fluctuating market prices and possible conflicts with landowners and people in their vicinity over land and firewood. In recalling these conflicts, both Madurese and non-Madurese people often make references to ethnic issues. Since negative sentiments against the Madurese have increased during the last couple of years, landowners increasingly no longer want to rent or to lease land to the Madurese, or they demand higher prices.

A local Banjarese leader commented: "We as original inhabitants here have decided and say to all: 'Don't give any land to Madurese to make bricks. Why should we help them to make money out of our land? Let them buy it honestly.'" Not infrequently, Madurese entrepreneurs and workers are accused of land grabbing, violence, and criminal activities. Although some Madurese are, or have been, involved in illegal and illicit activities ranging from land occupation and gambling to illegal logging, theft, and gang fighting, there are no indications that Madurese migrants are more violent or criminal than other immigrant groups such as the Buginese, Banjarese, or Butonese (Acciaioli 1999; Nooteboom 2005a).

Compared to other sources of income in Kalimantan, wages and profits in the brickmaking clusters are low and among the lowest wages paid in the area. The gross earnings of teams of workers range between Rp 15,000 and 35,000 (€ 1.50-3.50) per day, depending on the number of bricks made. Net earnings range between less than zero to Rp 30,000 per team per day. As soon as a sum of Rp 1 or 2 million has been saved, workers return to Madura or East Java. Sometimes workers choose to send their profits home and continue working. On an average, workers stay in Kalimantan for 8 to 10 months, but working periods of up to two years is not uncommon. In general, wages are saved by the owner of the brickyard, who also provides barracks to live in and food, cigarettes, and drinks on credit. No wages are paid for helping with the burning (3-4 times a year). However, food, drinks, and cigarettes are then provided free. Net profits of *serobong* owners range be-

tween Rp 500,000 to 2 million (€ 50-200) per month, depending on the number of workers and the prices of wood and bricks. About 15 percent of the *serobong* owners have additional sources of income such as trucks and trades.

Brickmaking is a dynamic sector. At the end of 2003, about ten percent of the *serobong* operating that year had gone bankrupt or ceased activities, while dozens of new *serobong* had popped up. Reasons mentioned for bankruptcies were mismanagement, heavy gambling, increased production costs, a lack of reliable laborers or credit facilities, and conflicts with landowners and suppliers. The number of default payments by non-Madurese buyers had increased considerably since the 2001 violence. Notwithstanding these difficulties, the total number of *serobong* rose by five percent in the same period, while the total numbers of workers increased with more than ten percent. "We have no other option," a second-generation migrant sighed, "Even if I wanted to return to Madura, I couldn't. There is nothing for me over there."

Windfalls and depressions

Firing the bricks is the culmination of all the economic activities of brickmakers. It generates periodic cash flows for the brickmaking households. After selling the bricks, debts can be repaid, remittances can be sent home to Madura, new laborers sought, new stock prepared, and relationships with neighbors, buyers and suppliers renewed. The economic crisis and later the threat of ethnic violence affected different links in this chain at different moments in time. In the following these will be considered, as well as the differences in responses among seasonal migrants, semipermanent migrants, semipermanent settlers, and settlers.

Initially, after the 1997 crisis, incomes plummeted temporarily as construction activities came to a temporary standstill. For a couple of months there was hardly any demand for bricks, as investors refrained from constructing buildings or houses. Many of the seasonal laborers – especially those belonging to enterprises with larger numbers of workers with less personalized ties between employer and employees – returned to Madura where they expected to be more needed and more secure in terms of basic needs. Of the semipermanent migrants, many did not return to Kalimantan after their yearly *Idul Fitri* holiday. They stayed in close contact with their employers, though. Most semipermanent and permanent settlers are *serobong* owners and they did not want to cease activities. Some (semi)-permanent migrants simply did not see any possibility or any use in returning to Madura, as they had nothing there. Most of the Madurese brickmakers received food and cheap rice

from government officials as part of the national *Sembako* programs. "Other ethnic groups pitied us and called us fellow countrymen." Brick producers shifted to more capital-extensive forms of production, cheaper kinds of wood – often gathered illegally in nearby forests – and the recruitment of family members. As a result of the sharp decrease in the number of laborers and in productivity, brick production decreased dramatically, but did not stop. Producers awaited better times.

These better times came after about six to twelve months. Higher export prices stimulated East Kalimantan's export economy, building activities skyrocketed, and real brick prices tripled as laborers were few and production could not meet the demand. "In those days, I was able to pay all the expenses for my three remaining children and their families in Madura and even buy a motorcycle myself," Dapi, a semipermanent settler and small entrepreneur, said. "Many of the workers who had dared to stay opened a brickyard themselves." Laborers were reluctant to come to Kalimantan out of fear of taking high risks. The seasonal and semipermanent migrants who had gone back to Madura missed the opportunity to profit from this bonanza.

Semipermanent migrants with good contacts in East Kalimantan and close relatives of *serobong* owners were among the first to return. After repeated phone calls from successful relatives, and forced to leave because of a total lack of income-earning opportunities in Madura, or due to large debts from tobacco production, finally large numbers of laborers came to East Kalimantan again. They came too late to profit. The first bonanza was almost over. Due to the massive influx of laborers and the subsequent increase in brick production, prices of bricks declined by the year 2000.

As a result of declining opportunities in Kalimantan, seasonal migrants from East Kalimantan as well as from Madura tried to enter Malaysia – many of them illegally – where real wages were much higher due to the increased exchange rate between the rupiah and ringgit. Among these migrants, second- and third-generation children of Madurese settlers were also found, as East Kalimantan served as a stepping stone in the migration chain. Of the seasonal migrants from Madura, only those with sufficient funds or loans could run the risk of capture at the border. The poorest of the seasonal migrants went to Kalimantan. While incomes of, and remittances from, laborers and settlers in East Kalimantan stagnated – albeit at a much higher level than in Madura – those of successful migrants to Malaysia boomed. In some cases, laborers were able to remit millions of rupiahs to Madura.

The pattern described above repeated itself after the ethnic violence against the Madurese in 2001 in Sampit, Central Kalimantan, with the difference that now most Madurese felt that their lives were directly threatened, while other immigrant groups were not affected at all. At

first, after the stories of the large-scale violence against the Madurese became widely known, about a quarter of all seasonal migrants in Samarinda panicked and fled. This time, insecurities and anxieties were huge as fear of the further spread of violence was paramount. Semipermanent migrants in the city took some clothes and their gold jewelry and flocked to the harbor to wait for a ship. Some of the permanent and semipermanent settlers sold their assets at far too low prices and sent their savings to Madura. The majority, however, stayed and awaited further developments. Although some cases of provocation were reported, the situation quickly calmed down after police officers and regional elites made it very clear that they did not want any violence to take place in East Kalimantan.[6]

This time, for the brickmaking entrepreneurs it was even more difficult to recruit new laborers, as the poor seasonal migrants did not dare to take the risk of migrating to an area under threat of violence. The perception of risk was high among potential migrants on Madura, as they were confronted daily with horrifying stories about refugees from West and Central Kalimantan. The massive attacks on the Madurese in these provinces caused a cultural trauma which has lasted to the present day. The Madurese say they do not feel safe in Kalimantan any more. Those who decided to migrate did so because no other option was left for them on Madura. Since the crisis in 1997 started, rural wages in Madura have continued to stagnate, even though they are already among the lowest in Indonesia.

At first in 2001, semipermanent migrants again refrained from returning after their holidays on Madura, while other ethnic groups refused to work for a Madurese employer. As a result, most brickmakers again had to rely on family labor and individual savings to keep their production going. The amount of available family labor had decreased as some brickmakers had decided to send their wives and children home. A brickmaker who stayed commented: "We had neither capital nor laborers. I tried to persuade close relatives on Madura to come, but most of them refused repeatedly. Finally I ordered my two sons here to help me. I did not want to abandon my brickyard here, as it was the only property and means of livelihood I have." Notwithstanding these bold remarks, fear of violence among (semipermanent) settlers was widespread. "I never made any trouble with my neighbors [of other ethnic background] so why should I fear?" "I wanted to go home – who could we still trust now? But there is nothing else for me." And so the majority stayed. "We had to wait and see what happened." Another reacted: "If we had left, they would have taken over all our property." Still today, the wounds of fear and trauma have not yet healed. Attitudes of other ethnic groups towards the Madurese have become fixed and they are more often depicted as troublemakers and problematic migrants.

"Sometimes customers are very rude and arrogant towards us. Sometimes they do not pay. We do not fight back. What can we do? We Madurese have lost our self-respect (*harga diri*) and cannot prosper here any more." The Madurese have changed their perspective on Kalimantan. It is no longer a promised land of "cheap money" and ample business opportunities.

Despite the fear of future violence and the increase in negative sentiments against Madurese brickmakers, new seasonal migrants from Madura started to pour into East Kalimantan from mid-2002 onwards. In this period an increasing number of Madurese seasonal migrants who had once worked as brickmakers also tried to migrate illegally to Malaysia. It has been estimated that hundreds of thousands of East Javanese – including the Madurese – have been working illegally in Malaysia. As a result, the amount of remittances sent to Madura from Malaysia exceeded those from Kalimantan during this period. In early 2003, however, Malaysia decided to close its borders to laborers and launched a repressive policy to send back all illegal workers. Since then, the numbers of seasonal migrants to East Kalimantan have further increased and the price of bricks has been slowly dropping due to massive overproduction.

The hidden sector: stonecutting

There are two locations in the vicinity of Samarinda where stonecutters work, Batu Putih and Batu Besaung. Most of these stonecutters are of Madurese descent. In the large stone quarries in these rocky hills, a dozen kilometers outside the city, men cut and female workers crush rocks to sell for use in road building and construction work. The construction sector in East Kalimantan has profited greatly from the decentralization policies which allocated larger funds to the province. Much has been invested in prestigious projects such as new roads, shopping centers, and government buildings. The workers in the quarries live in simple houses or sheds, and a huge social and cultural gap exists between the stonecutters and the people who live in the city. Most city people do not know that so many of the Madurese live and work there and the workers hardly ever enter the city.

Most of the work in the quarries is done with simple tools such as a hammer, chisel, lever, and shovel. Day after day, women hammer small rocks into pieces to be sold as gravel. Men work in the quarries or on the face of sheer cliffs using sledgehammers, jacks, and levers. Fire is also used to make the rock crack more easily. Sometimes middlemen hire an excavator to remove sand and rocks and to make access roads for trucks to enter. Some of the semipermanent migrants who once came to make some money have become semipermanent settlers. They

earn quite reasonable incomes now, but most of the newcomers live barely above subsistence level, with workers in Batu Putih being slightly better off than those in Batu Besaung.

Both areas are part of a low but massive mountain ridge which runs from the southwest to the northeast of Samarinda. Batu Putih, closest to the city, has the oldest quarries. About a hundred people work there. Almost all of them come from one village in Sampang, Madura. Half of the Sampang people have already been living on the mountain for one or two decades. They are still semipermanent migrants and most workers go back to Madura every year. Some brought their families with them. About one-third have worked for more than 20 years there. All expressed their hope to return and to buy some land or cattle on Madura. Only a few have ever managed to save enough money to leave.

The working conditions are harsh and earnings can be very low in slack periods when construction projects stagnate and the weather is bad. Incomes also depend on the workers' experience and their location in the quarry. The most favorable places are for those who have stayed the longest. At the best spots, workers can earn up to Rp 100,000 (€ 10) a day if it does not rain. On the other hand, newcomers are given much less favorable locations and sometimes earn less than Rp 15,000 a day (€ 1.50), which is not enough to meet daily expenditures, no matter how simply they live. As a result, newcomers often become indebted to middlemen.

As in the brickmaking sector, houses, cash advances, and loans are provided by employers and middlemen. About one-third of the temporary laborers are heavily indebted to these people and cannot return to Madura unless debts are repaid. Usually they pay off their debt with stone while they take credit again to pay for daily expenditures. Things get worse if laborers gamble away large sums of money or if they fall ill for a long time. Some of these laborers have been indebted for over four years without any hope of ever returning the loan. These forms of debt bondage are quite common between the Madurese, but are seldom found among laborers from other ethnic groups who work in the quarries. The Madurese cannot easily walk away with their debt as the village of origin and relatives are known and will be held responsible for the debt.

A few of the quarrymen have worked their way up to become transporters, middlemen, or moneylenders, and have settled down in Samarinda. They say they aim for a future in Kalimantan. Two former laborers from Batu Putih own a small transport company and a few others have become middlemen; they collect fees from trucks for the owner of the quarry, recruit laborers, and give loans to workers in trouble. These middlemen hardly ever go back to Madura.

The situation in Batu Besaung is not much different from Batu Putih, except for the larger numbers of laborers in Batu Besaung and the

higher ethnic diversity. Despite this diversity, the Madurese still make up the majority of the people. But here Madurese from all areas can be found and many refugees from West and Central Kalimantan also work there. Batu Besaung can be called the dustbin of Samarinda's informal migrant economy. If newly arriving migrants are not successful in finding a job in construction or a trade in the city, they end up in the quarries of Batu Besaung. As soon as they have found a job in the city or earned enough to return to Madura, they disappear. I did not find any permanent dwellers, although some returning migrants have worked intermittently in the area for over five years.

Both Batu Putih and Batu Besaung are divided into about 20 blocks owned by investors of different ethnic background such as Buginese, Banjarese, and Chinese. These entrust one of the workers with collecting fees from contractors' trucks and wait for the money to come in. Every truck pays a fee of Rp 10,000 (€ 1) to the block owner while laborers receive Rp 35,000 for a load. The remoter the quarry, the lower the prices. Especially in these remote areas, conditions for laborers are poor, sometimes without proper sanitation, shelter, and tools. If payments are late or middlemen are unreliable, workers can come close to starvation. Usually all risks are borne by the worker. Every year, a few people die in the quarries due to accidents. If no savings or friends are available, they are buried on the spot. In some cases (Chinese bosses), the owner of the quarry paid for the repatriation of the victim to Madura.

Diversified impacts

In 1997, just after the monetary crisis (krismon), hit the country, all construction activities came to a virtual standstill, along with earnings in the quarries. Many of the seasonal laborers from the Batu Besaung area returned to Madura. For a while, some workers from the city tried their luck in the mountains, but there were hardly any buyers, especially not in the faraway places. Out of the semipermanent migrants in Batu Putih who had the money to go to Madura, many did not return to Kalimantan after their yearly *Idhul Fitri* holiday. The majority of permanent migrants did not leave for Madura and awaited better times. Some of them used their savings, and most received cash advances from their middlemen. They stayed in close contact with transporters to sell stone whenever possible and did not want to leave or give up their favorable locations.

In the older Batu Putih area, the local government provided a good supply of food aid and cheap rice. This help was clearly facilitated by the fact that one of the hamlet heads in the area was Madurese and he depicted the quarrymen as being very poor. As a result, the semipermanent laborers decided to stay and wait for better times, as did many of

the seasonal migrants. They just continued working and accumulated large stocks of stone. Laborers who had savings used some of their savings to stay alive and helped other Madurese as well. When construction activities started, these workers could sell their stocks at high prices and experienced a windfall profit. Due to a shortage of stone since then, and cooperation between laborers, middlemen, and transporters – of whom the majority are Madurese – prices of stone could be kept high and increasing costs of living due to rising prices could be met. For this reason, up until now, prices have been good and the real wages of quarrymen have not dropped. As demand remains strong and production is relatively stable (no one can cut more stone than he used to do and the number of quarries near the city is limited), favorable prices can be maintained. Some of the semipermanent migrants of Batu Putih have managed to buy cattle, a house, or land in Madura. More important than the continuity in income is the fact that the workers in the remote quarries are relatively invisible and their livelihoods are not affected much by the fear of violence and increased negative sentiments towards the Madurese.

During the violence in West and Central Kalimantan, the quarries of Batu Besaung became a favored hiding place for all sorts of people who had to flee because of trouble elsewhere. At the end of 2001, dozens of refugees from the violence of West and Central Kalimantan worked in some of the most remote quarries at Batu Besaung.[7] By the end of 2003, nearly all of them had disappeared as they slowly moved into other sectors of the Samarindan economy or had received legal status as an inhabitant, which means the obtainment of an identiy card (KTP).

The survey in the quarries showed that there can be many more reasons for trouble, and for quarrymen, personal tragedies outweigh the negative effects of the economic crisis and violence. Debts in Madura are often mentioned among the reasons for working in Kalimantan. These debts can be caused by excessive gambling (which seems to have increased since the crisis), by misfortune, or by speculation in the tobacco trade. Elsewhere (Nooteboom 2003) I have described the high risks taken in the tobacco trade by farmers and middlemen. In many cases, tobacco trade was mentioned as the prime reason for indebtedness.[8] One worker told me that he had lost Rp 100 million (€ 10,000) in 2003. After selling his house and land, he still had a debt of Rp 35 million (€ 3,500). Fleeing to East Kalimantan was his only option. "I will work until I can pay it back, otherwise I will never be able to return to Madura," he explained. Other reasons for finding a hiding place at the quarries are problems due to involvement in extramarital relationships and theft or other crime.

In summary: the violence in West and Central Kalimantan shocked the stonecutting community. Many of the seasonal laborers decided to

go home, while most of the semipermanent migrants decided to stay, as they feared losing their prized spots. Refugees from areas of conflict in West and Central Kalimantan enjoyed the anonymity of working in the quarries and the company of fellow Madurese people far away from urban crowds, bureaucracies, and police officers in whom they had lost all confidence.

The safe sector: vegetable farming

Compared to the two sections described previously, the case of the cluster of Madurese vegetable producers is somewhat unique. In East Kalimantan, the Madurese are seldom found in the rural areas – as compared to West and Central Kalimantan – and there are no other clusters of agricultural producers. Moreover, these migrants have prospered since the sequence of crises in 1997 started.

Since 1983, about 150 Madurese people from the south of Malang (East Java) have settled in this area.[9] Originally two brothers, locally known as the Giman brothers, came as rural laborers in search of land. They had gambled away their father's property in Malang and were very committed to starting a new life and to regaining land. First they worked as rural laborers in the Lempake area which was cleared by loggers and opened up for transmigration purposes. As land was abundantly available, they were able to borrow some land and started planting. After a year, they returned to Malang to bring their wives to Kalimantan. Together they built a simple shed from logging leftovers, and they planted food crops and chilies as an additional cash crop. The harvest was transported to Samarinda town in boats (*proa*) borrowed from some Kutai neighbors. They got a very good price at the market and were able to buy a hectare of land together. After this good start, they slowly improved and bought land whenever something came available. After only a couple of years they started to improve their house. "We skimped on everything to be able to save. For years we only bought secondhand clothes, even at *Idhul Fitri*."

On every return to Malang, they brought some more relatives or Madurese laborers with them. After ten years, a road was opened and the Giman brothers started to plant papaya for the urban market. With the papaya they earned a modest, but stable income which enabled them also to grow riskier crops such as tomatoes, chillies, and rambutan, and to engage in trade.

At the moment of writing, the Giman brothers own four hectares each and employ a dozen seasonal laborers from East Java. Besides them, 40 relatives and fellow villagers have also established farms and now there are over 150 Madurese-speaking people in the area. Not all are as successful as the two first brothers, but all of them have a good

and stable income, are able to send their children to school and have established good relations with other ethnic groups in the area. Average incomes range from Rp 5 million (€ 500) per month for the most successful producers and traders to Rp 1 million (€ 100) for those who are dependent on wage labor on their relatives' farms. As farmers and traders, they have been keen on keeping good relations with other people in the area, as they are the prime prerequisite for economic success.

Windfalls and depressions

During *krismon*, the vegetable farmers received top prices for their products and were not affected negatively at all. They produced a wide variety of products solely for the market in Samarinda and provided food crops which remained in demand. Soon after the rupiah was devaluated, the benefits of the improved terms of trade became felt in the capital of East Kalimantan. The oil, gas, mining, and timber sectors profited from the increase in export opportunities, and illegal logging flourished in the political vacuum. When, after the fall of Suharto, some of the large sawmills in Samarinda went bankrupt and illegal logging was slowly curtailed, a boom in government revenues as a result of decentralization policies continued to fuel the urban economy. Fruit, vegetables, and chillies remained in demand as domestic production in East Kalimantan continued to be insufficient. The Madurese producers mobilized more laborers from East Java in this period.

For the vegetable farmers, the violence in West and Central Kalimantan came initially as a great shock. They had burnt their bridges in Java and saw no opportunity to return. Moreover, they were very much inclined to stick to their land. As a response to the violence and the perceived negative image of Madurese, they tried to build better social relations with their neighbors. Regularly they explained to me the importance of living in peace with their neighbors and told about their activities to establish good relationships.

As head of the Madurese neighborhood, Pak Gimun, a horticulturalist and informal leader of the Madurese vegetable and fruit nurseries in rural Muang Dalam, organized several peace ceremonies with Dayak neighbors from forests nearby and their regional leaders. "We ate together, exchanged gifts, made music, and agreed not to start any hostilities. I even paid them money." They agreed to report any problem with one of their people directly to each other to be settled. Remarkably, the Buginese people, with whom relationships in this area are tense due to fierce competition about land and the vegetable trade, were not invited.

As the urban economy of Samarinda was still booming, demand for vegetables remained high. The vegetable producers continued to recruit laborers from East Java predominantly from Situbondo, Bondowoso,

Jember, Lumajang, Banyuwangi, and Malang areas.[10] These laborers were Madurese-speaking, but also mastered Indonesian or Javanese and could hide their Madurese identity. "I did not want any laborers from Madura island. I did not want any trouble here," Pak Gimun commented.

Although the majority of the farmers and some of the semipermanent migrants and settlers in the other sectors adhere to accommodation strategies and could hide their identity as Madurese, not all invested equally in friendly relations. In particular among farmers who live in relatively isolated communities, many can be found who refrain from contacts with other ethnic groups as much as possible. They tend to avoid any interaction with outsiders and live and work within their own communities. Food and goods are supplied by employers or community leaders who serve as brokers with the outside world.

Epilogue

During the 2001 FKPMKT and FORKAS (peace building) meetings in Samarinda (Van Klinken 2002; De Jonge & Nooteboom 2006), the government organized a number of indigenous reconciliation rituals that were supposed to be repeated at lower levels. Leaders exchanged presents and promised to settle individual conflicts between different ethnic groups through communication and in harmony. The rituals remained very artificial, however, especially for Madurese who are not used to this kind of ritual and, with the exception of Muang Dalam, this example has never been followed by any Madurese leader. Besides enforcing dialogue and reconciliation, the government banned public references to ethnic issues and instructed local leaders to perceive conflicts not as ethnic conflicts, but as individual cases between people. Their slogan: "Don't play the ethnic game, look at the individual,"[11] became known and used by almost all Madurese. To subdue negative sentiments and rumors about injustice, the government promised to establish and safeguard a fair judicial system. In practice, however, since 2001 negative sentiments against the Madurese have increased.

Towards the end of 2005, tensions rose sky high after the son of a Dayak *adat* leader was stabbed by a Madurese security guard, with this incident nearly provoking mass violence (see also De Jonge & Nooteboom 2006: 470). Large numbers of Dayak warriors from all parts of Kalimantan came to Samarinda to seek revenge. One day after the fight, one Madurese brickmaker was murdered and another wounded.[12] Again thousands of Madurese peddlers and laborers wanted to leave for Madura at this point, although only a few hundred actually left. Fortunately, no further violence occurred, with politicians, the military, and the police making great efforts to prevent any escalation of the conflict. The local mayor of Samarinda and the vice-mayor, who was a Dayak, as

well as police and army representatives tried hard to reestablish the intercultural communication forum (FORKAS) that had been used before, and organized a large peacemaking ritual to calm the people down.

Although the symbolic power of intercultural communication and the reconciliation ritual were significant, and might have been crucial in curtailing the activities of militant ethnic leaders, for ordinary Madurese migrants the dialogue had little meaning as they again did not feel represented. In general, the position of the Madurese migrants deteriorated. Only the relatively prosperous and socially well-embedded vegetable farmers could maintain their secure position due to ownership and control of their own resources. In all other sectors, for the Madurese it became harder to do business and expand activities.

Although migrants' investments in land and lease contracts in the brick sector increased (especially after the end of 2002), as a result of the violence there has been a general tendency towards investment and savings in Madura. Many settlers no longer spoke of investing in land and large houses, but preferred to save on Madura, or they only invested in goods which could be sold easily (such as trucks, motorcycles, or gold) in case of an emergency. Many also try – even harder than before – to get a family member to Malaysia or to one of the Gulf states. Migration to Malaysia has become very difficult, however, and many who tried to migrate became stranded in East Kalimantan and in particular in the northern district of Nunukan.

Paradoxically, at the same time, an opposite trend can be seen. As land is hard to borrow or rent these days due to the increased negative sentiments against the Madurese, Madurese families often buy or lease land together. This leads to the establishment of more mono-ethnic enclaves of Madurese farmers and brickmakers where seasonal workers just come to work and save before going back to Madura. Among stonecutters , who live further from town, this isolationist tendency is even stronger. This means that Madurese integration into the economy of East Kalimantan is decreasing and more Madurese than before tend to settle down (as they are forced to buy land). For the future, this might lead to less tolerance and more tension, instead of less. So far, the provincial government has not been able to find a solution to the problem of ethnic tension.

Conclusions

This chapter focused on those Madurese who were still able to migrate and carve a livelihood out of the soil of East Kalimantan, one of the richest provinces of Indonesia. It focuses on the differential effects of the crisis on different types of Madurese livelihoods. It deals with brick-

makers, stonecutters , and vegetable farmers in Samarinda District, East Kalimantan. In this province, new regional ethnic elites benefit the most from the decentralization process (Casson & Obidzinski 2002; Van Klinken 2002), while other ethnic groups, including the Madurese, tend to be increasingly excluded.[13] Madurese migrants in Kalimantan – relatively protected under Suharto's reign – felt the negative consequences of the crisis due to a stagnation of the rural economy in Madura, declining government contributions due to political changes, a loss of migration destinations due to large-scale violence in West and Central Kalimantan in 1999 and 2001, and Malaysia's policy to curtail the influx of illegal migrants.

Livelihood activities of the Madurese in Samarinda, the provincial capital of East Kalimantan, have been expanding since the Asian crisis hit the country. Notwithstanding this expansion, the entrepreneurial climate for Madurese migrants has been deteriorating ever since 2001 due to social and economic instability as a direct result of the violent conflicts in West and Central Kalimantan. The violence in West and Central Kalimantan inflicted a deep wound and indirectly traumatized hundreds of thousands of the Madurese. It was this crisis which had the greatest impact on Madurese migrants.

The case of Madurese migrants in East Kalimantan helps us to see in detail the dynamic processes of economic change, migration, and ethnic tensions which occur between local populations and outsiders during such a period of turbulence. For migrants, such periods are marked mainly by the creation of new anxieties and insecurities causing tensions at the local level with local populations who tend to adhere to conservative ideologies and "our people first" strategies. This process had clearly negative impacts on Madurese livelihoods.

The Indonesian crisis, a composite of *krismon*, reform, decentralization, and subsequent violence, has had short-term positive financial effects for Madurese brickmakers in Kalimantan but has weakened their livelihood base in the long run. This effect not only took place in East Kalimantan, but also in Madura and the eastern parts of Java due to a change in the direction and value of remittances. After the monetary crisis, at first the value of remittances from Malaysia increased sharply and more people migrated to Malaysia. After the ban on illegal laborers in 2003, remittances from Malaysia declined and East Kalimantan became important again. But since 2003, the value of these remittances has also been going down, as brick prices are declining due to overproduction. The brickmaking sector is a clear example of an economic sector dominated by a single ethnic group of migrants that has been challenged by the opposition of local populations. In response, members increasingly mobilize labor, capital, and resources from within their own group.

The stonecutters have been less affected in both a positive and a negative sense. They experienced neither special windfalls, nor many of the deep depressions. Only recently, when migration opportunities have become scarce, have some stonecutters tended to accept less favorable quarries and are impoverished due to poor working conditions. Seasonal laborers turn out to be more mobile in this sector. If not tied by a prized location or debt, they can leave their tools and go back to Madura. Moreover, the systems of agreed-upon prices have protected their livelihoods from the most negative consequences of the crises.

The situation of the vegetable farmers was the best. They continued to make money during turbulent times. Moreover, they were the most successful in establishing peaceful relation with other ethnic groups and gaining prestige and a slightly better image than the Madurese involved in the brickmaking and stonecutting sectors. As a result of these good relations, and because of the focus on cash crops such as vegetables and fruit, their incomes grew considerably.

The impact of the crisis should, however, not only be expressed in economic terms. The violence in West and Central Kalimantan has created a deep wound and indirectly traumatized hundreds of thousands of Madurese living in other areas. It is precisely this socio-psychological aspect of the crisis which had the greatest impact on Madurese migrants. It changed their life, their business opportunities, life chances, and their attitude towards Kalimantan. Moreover, it shows us the unintended consequences, or rather the collateral damage, of political changes during turbulent times.

Notes

1 For a good overview of the conflicts in West and Central Kalimantan see: Davidson and Kammen, 2002; Peluso and Harwell, 2001; and Schiller & Garang, 2002.

2 This is a rough estimate. The secretary of the KKMM (Madurese cultural association) estimated the number of Madurese heads of household in the areas of Balikpapan and Samarinda in East Kalimantan in 2002 at at least 35,000 (compared with 30,181 individuals as mentioned in the 2000 census for East Kalimantan as a whole). If we realize that most Madurese people live in and nearby these two cities, and that about half of these Madurese immigrants bring their families (average of two children) with them (survey data), at least an estimated 87,500 Madurese people would be living in East Kalimantan. This makes up 3.6 percent of the population (three times higher than the official results of the 2000 census).

3 A GPS was used to locate the exact sites and to plot them on a map of Samarinda (see map). (The map was been produced by Puslitbangwil-Unmul, the research center for regional development, Mulawarman University, Samarinda.) Of these 350 *serobong*, 79 were surveyed in detail and 15 were visited more than once.

4 In Samarinda alone, an estimated 3,000 Geger people work and live, while in Balikpapan, Bontang, and Melak another estimated 2,000 can be found (the majority involved in brickmaking). The numbers of Geger people in East Kalimantan alone out-

weigh those in Geger, Madura. Besides working in the brickmaking sector in East Kalimantan, Geger men work (often illegally) in construction in Malaysia and some are sailors or porters. A few Geger women work in Gulf countries as domestic helpers.

5 The Madurese language consists of two dialects, the eastern Sumenep type, and the western Bangkalan, Pamekasan, and Sampang type, which differ in intonation and vocabulary. Madurese-speaking migrants from the eastern part of Java speak the Sumenep type. In both speech and manner, the Sumenep Madurese are regarded as more refined, while the Sampang are considered the "roughest". The Madurese from Bangkalan are regarded as not very refined. Nevertheless, they look down on the Madurese from eastern Java who speak the Sumenep (refined) version of Madurese.

6 I have described this elsewhere (Nooteboom 2004).

7 Most of the victims of the violence in West and Central Kalimantan were people from Sampang district and who have been thrown out of West or Central Kalimantan. Some fled to East Kalimantan directly, others came via IDP camps at Madura where they were informed about the stonecutting work by relatives and friends. The situation in the refugee camps is difficult as generally not much work is available in Madura, let alone work available for newcomers.

8 During the post-*krismon* years, tobacco prices had plummeted on Madura, causing bankruptcy for many of the small farmers and traders who borrowed large sums of money.

9 The grandparents of these migrants came from Bangkalan in Madura and settled in Malang during colonial times.

10 In the eyes of other ethnic groups, these people are Madurese and are treated as such, but, according to those Madurese originating from Madura itself, they are neither Madurese nor Javanese and generally are classified as lower in status by both the Madurese from Madura and by other ethnic groups.

11 "Jangan main sampai suku, lihat individu."

12 It is not certain that the Madurese was murdered by the Dayaks rather than by others who wanted to further fuel the conflict.

13 An clear example of such attempts to exclude immigrant groups is the tendency to curtail the influx of poor migrants from NTT, East Java, and Madura in Balikpapan. Local authorities try to achieve this by organizing raids to check residence permits (*razia KTP*).

3 Livelihood Dynamics, the Economic Crisis, and Coping Mechanisms in Kerinci District, Sumatra

Paul P.M. Burgers

In spite of episodes of severe stress, rural areas in Indonesia have always shown resilience by absorbing redundant labor, as well as new entrants to the labor force. Processes of shared poverty and specific redistributive mechanisms levelled out shortages and surpluses in times of severe livelihood stress (Geertz 1963; O'Malley 1977; Lont & White 2002; Touwen 2000). There is much evidence, however, that decades of agricultural commercialization have altered these functions of rural areas, as notions of shared poverty and other safety net functions appear to have gradually fallen into disuse (Missen 1970; Kahn 1980; Hinderink & Sterkenburg 1987). The mainly redistributive mechanisms underlying or dominating livelihoods based on a subsistence-oriented system of wet rice cultivation have been transformed into more individualized and adapted forms of resilience. The Green Revolution in food cropping is increasingly combined with cash crop agriculture and off-farm employment. A crucial reality check of such resilience in rural areas under "normal" conditions occurred when the economic crisis hit the country in 1997, when large numbers of displaced workers from the urban sector had to return to their rural homes, especially on Java. As most studies were carried out at the macro level, and mainly focused on Java, declines in the absorption capacity of what was considered an already overburdened agricultural sector could indeed be observed. This was aggravated by mounting pressures of rising prices for agricultural inputs and crop failures caused by the prolonged drought induced by El Niño. However, an increasing number of studies have revealed the limitations of such macro-economic studies which produced an aggregate picture inconsistent with realities on the ground. It became increasingly evident that the crisis had taken different shapes, and had varied and often highly contradictory impacts on different rural regions, economic sectors and among different social groups. The studies failed to recognize the considerable diversity in people's ability to cope and adapt to a crisis by tapping into various markets and still existing (adapted forms of) off-market opportunities, which did not always bring a deterioration of livelihoods. Where commercial agriculture formed the major type of

livelihood, especially in the outer islands, farmers who planted export crops, were getting windfall profits from the depreciation of the rupiah against the US dollar. Usually, such increases in cash flows will allow for a reinforcement of community reciprocity. These adapted forms of redistributive arrangements through cash transactions may mitigate the impacts of skewed entitlement and access to resources in general, and to natural resources in particular, and therefore may offer important ways to survive during an economic crisis. This is especially the case for the poor and (near) landless, who are particularly vulnerable to drops in income, increasing food prices, and rising unemployment and underemployment brought about by crisis-induced events (Stringer 1999). Consequently, this may have bearings on both resource allocation and natural resource management. In order to fully understand the impact of the entire process of social change and the creation of new stability domains in livelihood resilience on natural resources, the aftermath of the crisis needs to be taken into account as well.

The mechanisms through which such global and national economic or political shocks and severe stresses are translated into local impacts and responses at the community and household levels are investigated in relation to their resource management strategies in three villages in Kerinci District, Sumatra, during the crisis and its aftermath (1997-2003). A cross-system analysis has been made in three selected villages, based on a number of similar and dissimilar characteristics. Similarities concern biophysical conditions, predominant types of land use, and indigenous knowledge systems. In order to understand the interactions between the national park and the village conditions, both research sites are located in the buffer zone of the Kerinci Seblat National Park. Dissimilar characteristics refer to different choices in upland crops, variations in land tenure systems, and different historical and contemporary contexts at the regional, the community, and the household level; these are crucial for understanding the variations in social organization and different livelihood strategies, as well as for understanding the differential resilience of rural areas.

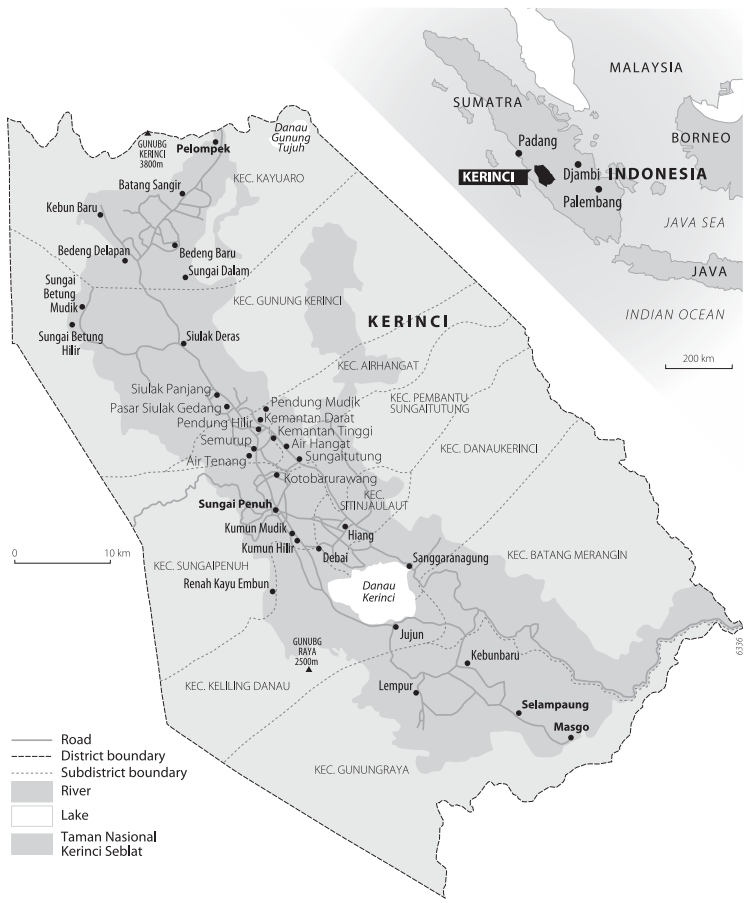
The setting and the study sites

Kerinci has always been known for its favorable conditions which support a livelihood around agriculture. Specialized rice farming has been the major type of livelihood in the Kerinci Valley after Minangkabau migrants from West Sumatra began clearing forest land for rice cultivation several hundred years ago. Nowadays, specialized rice farming continues to be a major type of livelihood on the flat valley bottoms of the district. However, in most parts of the district access to upland areas

can be secured, whereby livelihoods are increasingly constructed around the cultivation of commercial annual and perennial cash crops. Depending on the local biophysical conditions and preferences of individual families, chilli has become the most important annual crop. It is cultivated during the establishment phase of both intercropped stands and single stands of cinnamon trees (*cinnamonium burmanii*) or coffee trees (*coffee robusta)*. Rice cultivation remains however, an important fallback mechanism to secure food needs. The existing specific sociocultural arrangements in rice cultivation ensure access to rice cropping land beyond the limits of one's own farm on a long-term basis, as well as on a temporal basis in times of severe livelihood stress.

The three research villages are located in different parts of Kerinci District (see fig. 1). At an altitude of about 500 meters, the rather iso-

Figure 3.1 *Kerinci district and its position in Sumatra*



lated villages of Selampaung and Masgo are situated in the Gunung Raya Subdistrict in the southern part of the district. The third village, Pelompek, is situated close to Gunung Kerinci, the 4000-meter high volcano in the northern end of the district, at an altitude of about 800 meters along the main road to Padang. The dilemma faced by all households involves a trade-off between immediate subsistence needs and the long-term aim of resilience in their livelihood. Livelihood resilience in all villages can be achieved by combining rice cultivation with upland field cultivation, where crop diversity contributes to a further increase in livelihood resilience. In contrast to Selampaung and Masgo, where forest-like structures or so-called agroforests combine annual crop cultivation with coffee and cinnamon trees on a rotational basis, Pelompek's elevation and cool winds descending from Gunung Kerinci temper the average temperatures, especially at night, and therefore reduce crop choices. Here, dispersed tree systems include various types of commercial annual crops, while scattered cinnamon trees can be found in the field and along field boundaries to improve microclimatic conditions. Whereas most of the upland fields are under private ownership, rice cultivation in Selampaung and Masgo is largely dominated by kinship organizations, based on local regulations under the *adat* system of the mainly ethnic descendants of the early settled Minangkabau. Hence, the specific matrilineal organization of regulations determining natural resource use in these communities. Instead of private ownership, yearly access rights to rice-cropping land may be obtained by the female members of the family on a rotational basis (known as *gilir ganti)*. A rice field managed under these arrangements is known as a *sawah giliran*. In Selampaung, 61 percent of the survey households, compared to 41 percent of the households in Masgo, indicated that they have access to a *sawah giliran*. The lower figure in Masgo can be explained by the fact that most households in this village concentrate on cash crop cultivation, as suitable areas for rice cultivation are severely limited. However, many survey households continue to have access to a *sawah giliran* in their home villages, usually on the flat valley bottom. Within the boundaries set by *adat* regulations, people can manoeuvre between the exploitation rights and the allocation of plots, not only directly under the *giliran* system, but also on land belonging to others through sharecropping (the share stipulated by *adat* is fifty-fifty). Additional food security can be obtained by opting between local and high-yielding varieties, the latter enabling two harvests a year but requiring much more inputs. This flexibility is crucial for mitigating the skewness in the distribution of means and needs between the different heirs and co-villagers, and hence livelihood resilience, as it may help an individual to overcome temporal vulnerability in food security. Similar sharing mechanisms are also in practice in the upland fields, where share-

cropping deals are similar to those for rice cultivation (i.e., on a fifty-fifty basis for all annual and perennial crops). The original system provided sharecroppers with basic food items for survival during a period of two to three years. Especially in the case of cinnamon trees, sharecroppers were able to build up savings in the form of standing stocks of cinnamon trees by engaging in these deals. Pelompek holds a somewhat different position, in that this village was established by converting forestland into rice fields for the purpose of acquiring individually owned *sawahs*. Here, 43 percent of the survey households indicated that they hold their rice field in private ownership. This relatively low figure is due to by a continuous influx of people focusing solely on upland crop cultivation for their livelihood survival. However, even though strong *adat* regulations are absent in this recent frontier settlement area, this did not prevent the development of certain solidarity mechanisms among the relatively poor and homogeneous village population. The concept of *pinjam*, or borrowing, of land for cultivating both the rice fields and upland fields was developed here as a safety net mechanism for those in search of livelihood security. The various market and non-market safety net functions to increase resilience, and possibly also the sustainability of the livelihoods described here benefited both local residents and migrants. The true nature of livelihood resilience in the research villages was put to the test at the height of the economic crisis and exacted its worst toll.

Differential impacts of the crisis and its aftermath (1997-2003)

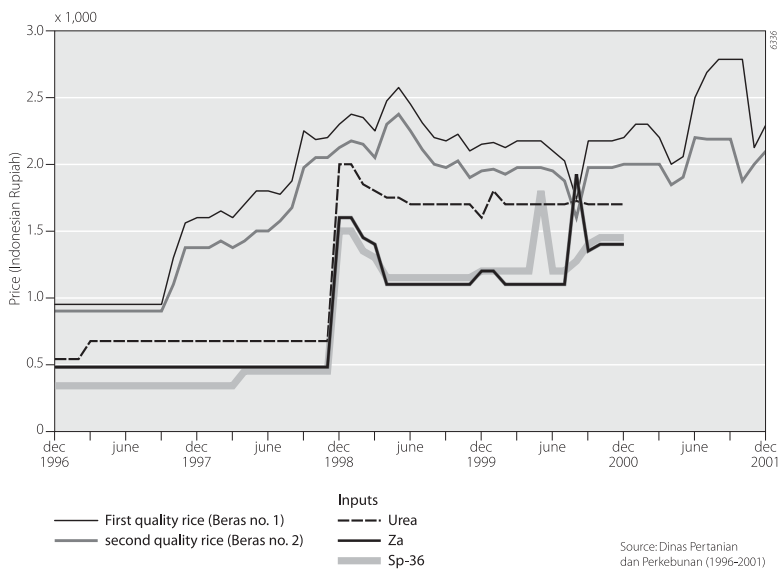
The apparent role of rural safety net functions together with the windfall profits from agro-export commodities during the initial period of the monetary crisis, or *krismon,* supported the idea that the agricultural (export) sector could become the engine to lift Indonesia out of the crisis (Daryanto 1999). However, Sunderlin et al. (2000) and Penot (2001) have rightfully pointed out that such an aggregate picture is too simplistic, as not all cash crops were benefiting from a depreciation of the rupiah against the US dollar. In addition, where livelihoods largely depended on food crop cultivation, in particular rice, rising food prices and remaining subsidies for rice initially brought increasing profits. Especially in villages where respondents were getting windfall profits from both rice cultivation and cash crop cultivation, the crisis was called the *krismon Jawa*, or the Javanese monetary crisis. However, this all changed after a few years, when cheap rice imports and non-subsidized inputs for rice replaced the original context of rice cultivation, and when prices of cash crops began to collapse as well. This underlines the important role of the rising rupiah prices for certain agricultural crops and

inputs and their impact on livelihood resilience in the research villages and therefore requires special attention.

The impacts of price developments in rice cultivation

In 1997, El Niño caused a severe drought and subsequent crop failures at the national level, which made rice prices increase steeply. This was aggravated by soaring prices of external inputs, as subsidies had to be removed as part of the SAP programs initiated by the IMF. Macro-level studies rightfully showed that this would cause serious constraints in food security. In the research villages in Kerinci District, however, local rather than the high-yielding rice varieties were most commonly planted. In contrast to high yielding varieties, local varieties could be grown without the use of external inputs and were much less affected by the drought. In addition, local rice producers could still benefit, as remaining stocks of subsidized inputs were sold at old prices (figure 3.2), enabling rice producers to benefit from the sale of rice; even when rice stocks were released onto the market in Sungai Penuh by the local BULOG agency to suppress the slowly rising prices. During the course of 1998, expensive non-subsidized, imported inputs replaced the depleted stocks. This marked a steep increase in costs for external inputs and severely limited the benefits from rice cultivation, especially on the

Figure 3.2 *Price developments of rice and most important external inputs (1996-2001)*



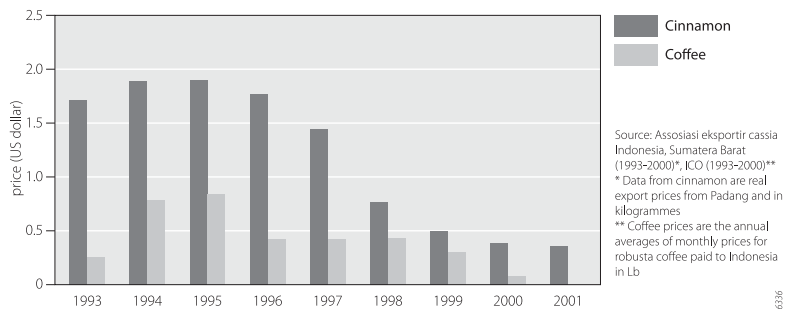
valley bottoms where high-yielding varieties were most commonly planted, and access to upland fields was limited. Many farmers were no longer able to cover input costs, and yields in these areas therefore began to decline. In the market, prices for rice were driven up even further, as an ever-increasing number of consumers now depended on the purchase of rice for their subsistence. Instead of market penetration, the local BULOG agency began to distribute rice to poor villagers in the valleys, who were among the first to be targeted for food assistance.

The influx of additional family members displaced from work in the urban sector, aggravated conditions in the overburdened food-crop sector in areas where the main type of livelihood was dependant on specialized rice farming and made it increasingly difficult for the rural economy to provide sought-after relief. The combination of these factors largely caused people to move towards areas and villages where access to cash crop cultivation could be secured, and where windfall profits from cash crops could easily cover subsistence needs and enable capital accumulation. The prevailing flexibility of the upland farming system, and in particular the underlying supportive social networks and the type of social organization, allowed for rather easy access to cash crop farming activities beyond the limits of one's own farm.

Price developments in cash crop cultivation

During the *krismon*, the rupiah prices for all cash crops increased spectacularly, although the magnitude of the profits was closely connected with the value of the American currency. Figure 3.3 shows that prices for cinnamon bark remained relatively modest, as increased production from Vietnam and favorable trade deals between Vietnam and the US depressed the prices for cinnamon from the mid-1990s onwards, which

Figure 3.3 *Price developments in US dollars for experts of cinnamon (per kg) and coffee (Lb)*

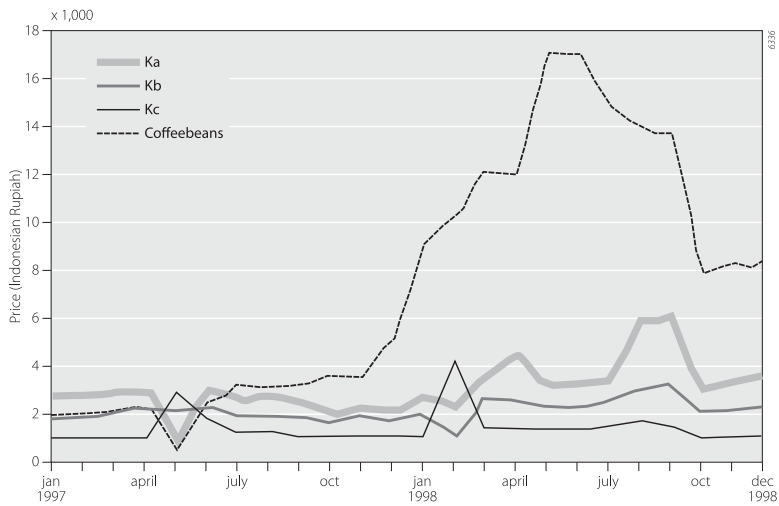


however in Indonesia were paid in rupiahs. In addition, the cinnamon trade operates in a highly oligopsonistic market. This means that there are only few, but major buyers available, which therefore are able to negotiate the price at a certain level, often related to a request for a certain amount.

The depreciation of the rupiah against the US dollar allowed importing countries to get good deals as they had ample bargaining power to set the prices. By paying in rupiahs rather than in US dollars during the *krismon*, favorable exchange rates for importing countries caused further losses through continuing rupiah depreciations. These losses were then trickled down to the local traders, finally ending up at rather low price levels at the farm-gate level. Figure 3.4 shows that the outcome of the various constraints in price setting for cinnamon were translated into a relatively low price paid in rupiahs at the farm-gate level.

The rather simple distinction into three different qualities for cinnamon bark (ka, kb, kc) in figure 3.4 is the same as that employed at the farm-gate level by small-scale producers and middlemen, when cinnamon bark is sold and traded at the local market. Exporters usually distinguish at least six different grades of quality, mostly depending on thickness, oil content, and cleanliness of the bark. The figure shows that those who were able to sell the best quality cinnamon bark (ka) were benefiting the most from the depreciation of the rupiah as the

Figure 3.4 *Price developments in Indonesian Rupiah for most common cinnamon qualities (ka,kb,kc) and coffee in the Kerinci District per month (1997-1998)*



Source: Dinas Pertanian dan Perkebunan, Kabupaten Daerah tingkat II, Kerinci (1997-1998)

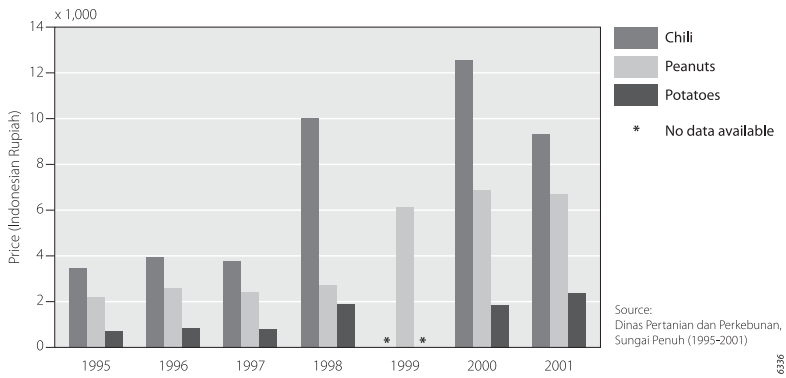
price increased from about Rp 2000 in January 1998 to around Rp 6000 in July 1998. The other grades did not go beyond the Rp 4000 mark, but the advantages of multi-cropping began to show. As the peak price for the best quality cinnamon bark occurred in August-September 1998, it could partly compensate for falling coffee prices during this time, which reached its peak of Rp 17,500 per kilogram in the second week of June 1998, after which prices fell sharply (Dinas Perkebunan Kerinci, 1998). These variations in peak periods of prices in rupiahs for the various perennial cash crops allowed for high cash generating opportunities among the households for a substantial period of time, which sustained livelihood resilience. This was further strengthened and extended when windfall profits for the annual crops began to materialize as well.

Price developments for annual crops: chilli, potatoes, groundnuts, and rice

The cultivation of commercial annual crops constituted a third option for income during the *krismon*. Although chilli is the most important crop, groundnuts are a second common crop in the research villages. In Pelompek, the cultivation of potatoes further augments profits at the farm level (figure 3.5). However, according to respondents, potatoes can only be planted once a year because of the crop's high demands on soil nutrients.

The local varieties of chilli that were planted in either Selampaung or Masgo, required no or hardly any external inputs. However, in Pelompek good yields on fields that were cultivated permanently with annual crops, and especially with potatoes, could no longer be obtained without the use of external inputs. But with subsidies still intact for external in-

Figure 3.5 *Trend in Rupiah pries for the major commercial annual crops planted (1995-2001)*



puts during the *krismon* period, considerable profits could be made, thereby strengthening the resilience of the livelihoods in the research villages. Similar to rice cultivation, especially the price of chilli started to fall from early 2000 onwards, while the depletion of cheap stocks of subsidized inputs gave way to unsubsidized, highly expensive imported external inputs, leading to significant decreases in the profit margins. This especially affected Pelompek, where the profitability of annual crop cultivation highly depended on the use of external inputs.

This analysis shows that farming households initially were able to benefit tremendously from a combination of factors, of which the high rupiah prices for various cash crops at different intervals in combination with lasting subsidies for inputs were most important. The sudden reversal of this situation in the aftermath of the *krismon,* however, caused a large-scale deterioration in livelihood conditions, as profit margins severely declined due to falling crop prices and sharply rising input costs. These contrasting periods allow for an evaluation of the dynamics in livelihood resilience and sustainability caused by increasing pressures on the national, regional and local institutional settings and the community support mechanisms (such as sharecropping and land borrowing concepts of reciprocal help) in the aftermath of the crisis. Various types of community support mechanisms define access to and conditions of support. They play a crucial role in our full understanding of the various responses and livelihood strategies developed by the individual households beyond the realm of purely economic explanations such as the changing profitability regimes of various crops.

Livelihood dynamics during the windfall period (krismon 1997-1998)

Changes in the price for the various commodity crops and the rather favorable conditions for rice cultivation during the period known as *krismon* are paralleled by a remarkable and rather large scale movement of people from both within and outside the district to particularly the upland areas in Kerinci. This can be explained by the continuing integration of people from Kerinci into wider multi-local and supra-local social networks. News about how community support mechanisms and interhousehold transfers offered new opportunities to generate earnings in the villages spread over vast areas. Under these favorable conditions, landowners of both ricefields and upland fields tended to direct scarce family resources towards the upland fields. Knowing the conditions in areas where households manage both rice fields and upland fields, migrants could see how landowners sought ways to rent out their rice fields. In particular sharecropping deals were struck as a means of escape from deteriorating livelihoods in their areas of origin. These often were areas where specialized rice farming could not sustain a livelihood

above the level of survival. Direct access to livelihood survival was made possible through increasing employment opportunities for paid farm laborers, because of the large flows of cash in the villages, while sharecroppers with upland fields could receive a two-year bonus in kind. Paid labor opportunities were especially important for those in search of daily survival, as it enabled them to bridge the time between planting and harvesting of crops such as rice and vegetables. However, in-migration also appeared to be a matter of reaping as many benefits as possible from finding access to agricultural land beyond the limits of one's own farm. Where vegetable cultivation allows for the accumulation of cash in the short term, the accumulation of (sellable) assets in the form of possible rice surpluses or cinnamon bark was also made possible by the supportive arrangements of temporary access to cultivation areas of other households, through *pinjam* or *sharecropping* arrangements. However, as *Minangkabau adat* prevails in two of the three research villages, access to rice fields is first of all meant as a social security and sharing mechanism among relatives or co-villagers. Access under these arrangements may not be open to everyone. Our data support this, as most migrants who became sharecroppers on a *sawah giliran* during the *krismon* had at least similar sociocultural backgrounds with similar institutional settings in relation to rice cultivation, and came mainly from the flat valley bottom areas where *Minangkabau adat* still largely defines rice cultivation (50 percent). Hence, the inclusion in wider social networks in general, and kinship relations in particular, are most important for rice cultivation in these two villages. In Pelompek, with private ownership of rice fields, access under *pinjam* arrangements or renting is open to anyone. A large majority of newly settled migrants (78 percent) indicated that they came to Pelompek to cultivate rice. Those who were able to get access to rice fields hoped to secure their food needs and to be able to sell a certain surplus to obtain additional cash. To benefit as much as possible from the favorable conditions, many of them fell into or engaged in debts for planting high-yielding varieties (60 percent) and accumulating as much rice as possible. These practices constitute the middle path between a survival and an accumulation strategy, but most households considered this simply as accumulating for the purpose of survival only, as the rice would mainly be stored for home consumption. The majority of settlers in the 1997-1998 period also participated in paid labor activities for their daily survival. Once survival was secured, most of them would also try to find temporary access to upland fields, usually through sharecropping arrangements or *pinjam*, in the case of Pelompek. These support mechanisms were said to be quite easily accessible as well. Finding access to upland fields was much more common, as only one fifth of all migrants coming into the research villages during the *krismon* were searching for rice fields. This

means that an overwhelming majority of 80 percent came to Kerinci to find access to upland fields where windfall profits could be made from the cultivation of annual and perennial cash crops. Higher mobility into the uplands, however, may also have exerted increasing pressures on natural resources in the upland areas.

The upland fields and associated tree cover

In the literature on the effects of the crisis and its aftermath, forest areas have been identified as a main target for income generation or conversion into agricultural land (Sunderlin et al. 2000; Casson and Obidzinski 2002). The widespread influx of poor migrants into the upland areas of the research villages might similarly have induced forest conversion and the loss of tree cover through large-scale harvesting of cinnamon trees for at least two reasons. Firstly, because of the significance cinnamon trees have in stabilizing livelihoods as a savings bank that might be used for large-scale harvesting to cash in on their savings. Secondly, in areas where coffee trees constitute the under storey, the harvesting of cinnamon trees would generate a large cash income, due to high rupiah prices while the penetration of sunlight on the coffee trees allows them to bear coffee berries within one year. However, our fieldwork during this period showed the contrary. The tree cover of cinnamon trees remained largely intact. In-depth interviews revealed some very rational behavior with respect to these dynamics. The main reason was the fact that livelihoods were kept well above the level of survival through these windfall profits obtained from almost every crop they had planted, while daily and weekly cash could easily be obtained through selling cinnamon bark from branches only or through wage work. In Pelompek, where cinnamon trees are part of dispersed trees systems, the cinnamon bark only serves the purpose of bridging the gap between earnings from the sale of vegetables and costs of investing in a new cycle of vegetable cultivation, when the income from vegetables is insufficient to cover these costs. With increasing prices for vegetables, however, this was not a problem. Without a real need for a large sum of cash, the necessity to withdraw large savings for survival by cutting down the cinnamon trees was absent. If large-scale harvesting did occur, it was done to raise money for durable consumer goods, housing, a pilgrimage to Mecca, or a journey to Malaysia in search of employment opportunities. In some cases, farmers would also sell their land as well to cover these costs, but it was not very common during those times. Another important reason was that most landowners owned more than one plot. The most common practice was to work on a harvested cinnamon plot, either one of their own plots or as a sharecropper. The income from chilli cultivation on these plots easily allowed

them to survive, especially in combination with fields where coffee and/or branches from cinnamon trees could still be harvested as well. A group of 67 percent of the cultivators indicated that the land they were cultivating belonged to others, and that they were either a sharecropper or involved in *pinjam* arrangements during the year 1997-1998. This turned out to constitute an effective accumulation strategy for those who did not own land or landowners without enough land to survive. When in 1997-1998 a growing number of sharecroppers specifically wanted to combine survival strategies with a short-term accumulation of cash, especially through vegetable cultivation, sharecroppers themselves began initiating changes in the original sharing deals in order to benefit from sharecropping as much as possible. There appeared to be consensus among the landowners as well as sharecroppers that the sharing arrangements should reflect the degree to which one of the two parties invests in certain resources. Increasingly, sharecroppers wanted to bring in all necessary inputs for vegetable cultivation and forego the bonus, as long as they were allowed to keep the entire earnings from the vegetable harvest. The input costs that were now being borne by the sharecroppers were either covered by savings they had raised from off-farm employment or by loans from friends or relatives. Once the vegetable production started, the high earnings would enable loans to be paid back easily. With most landowners mainly interested in accumulating cash from harvesting cinnamon trees, they usually agreed, providing that the cinnamon harvest would be split according to the *bagi tigo* principle, or one-third for the sharecropper and two-thirds for the landowner. The data for Selampaung support this change in arrangements, as in 1997-1998 a large majority of the sharecroppers (69 percent) in Selampaung cultivated vegetables without any bonus or inputs from the landowner, receiving the full profit of the harvest instead. In more remote Masgo, only 27 percent indicated to have pushed forward these changes, which were limited to respondents staying close to the road and the market. Physical distance to the market and difficult terrain would still favor the receipt of a bonus for remote fields, as usually the landowner would bring these items to them using a four-wheel-drive car, or by renting a motorcycle (*ojek*). With respect to the impact on forest cover, such high in-migration, however, may have increased pressure on forest areas. There is a slightly steeper curve in forest conversion during the years 1997-1998, rising from 13,707 hectares in 1997 to 14,170 hectares in 1998, after which it levelled off. Households may indeed have invested in converting forest areas into cinnamon plantations. In-depth interviews revealed that these households usually belonged to the richer segments, quite often returning migrants from Malaysia with large amounts of savings, or local rich farmers. Being well connected to local authorities, they could benefit from the

chaotic situation in forestry management during this period, caused by a vacuum in the enforcement of regulations which in turn was due to the necessity to increase regional income under conditions of regional autonomy.

The aftermath of the crisis (late 1998-2003)

After about one year of windfall profits for almost every agricultural commodity planted in the upland areas, the situation began to change from late 1998 onwards. The booming times reverted into a situation where it became increasingly difficult to construct a livelihood above the level of survival as prices of almost every crop started to fall. Declining prices were moreover caused by overproduction resulting from the opportunistic planting and rehabilitation of previously abandoned perennial cash crop gardens, mainly coffee, during the price windfall. With chilli and coffee now flooding the markets, prices remained at a historical low for several years in the aftermath of the crisis. This period coincided with the exhaustion of the stock of subsidized external inputs in Kerinci, which were replaced by expensive imported external inputs so that households increasingly faced constraints in adapting or switching to other products and practices. With price adjustments for basic foodstuffs lagging behind the rising costs of production, the falling profits for their agricultural products drove home the harsh realities of the crisis for both producing and consuming households in Kerinci.

Because in the initial phase prices for vegetables remained quite high, especially survey households in Pelompek expressed satisfaction about their situation. Potato prices were on the rise, while the local chilli variety still brought some profit. In Selampaung and Masgo where most rejuvenated fields were now entering the phase of coffee cultivation, the sharp drops in coffee prices made it hard to survive, especially for the many sharecroppers who had to split in half their already small profits! The deterioration of cash flows further caused community support mechanisms such as paid labor and loans to vanish, thereby severely limiting short-term survival. The only way out for many of them was to abandon the land, and migrate out for reasons of mere survival. During one of our fieldtrips in June 2001, in-depth interviews with several key informants revealed that about 60 percent of the survey households working in the upland areas had left. This was confirmed by the formerly very crowded market day on Saturdays, which was now completely deserted. Those traders remaining were either cultivating vegetables, which still continued to provide some income as well as meet the demand for essential food crops, or were just waiting for the end of the coffee harvest. Coping responses mainly consisted of out-migration, initially to their home village to (re) turn to food production by planting

local rice varieties with low external input. Here they either tried to get their exploitation rights on a *sawah giliran*, or worked as a sharecropper on other people's rice field to supplement their subsistence needs. In Pelompek, an increase in renting rice fields for cash could be observed (usually the rent could be paid after the harvest). Shortages of cash to keep their livelihood above survival level were accompanied by increasing prices for rice caused by the decreasing supplies entering the market, as villagers who did not want to sell their small food crop surpluses had switched to local varieties, which require far less external inputs, but can only be harvested once a year, reducing rice production by half. The local BULOG office started interfering by bringing more rice into the market, and consequently kept the price within affordable levels. The OPK (Operasi Pasar Khusus), or special market operation, only came into being from late September 1998 onwards, when the unfavorable conditions persisted and had used up all possible alternatives for most households, including the use of various types of community reciprocity. The survival of each individual household member was increasingly at stake, and there was severe competition among the heirs to obtain exploitation rights for the *sawah giliran*, which can only be secured theoretically once in every four to five years. Under these conditions, it does not seem surprising that many local residents and a substantial number of migrants from outside the district began to move into the upland areas of Selampaung and Masgo in search of sharecropping deals for their survival. With good social networks extending into Kerinci, substantial numbers of people coming from the Pesisir area in West Sumatra and other areas where specialized rice farming was no longer feasible, were mainly attracted to the research area to work as a sharecropper because of the original bonus system. In contrast to what survey households perceived as handworks during 1997-1998, these newcomers would only work as sharecroppers where the landowner provided them with a bonus of basic food items for at least two years. During in-depth interviews with these newly arrived migrants, they explained to us, that if after two years prices of cash crops would not improve, they would also simply abandon the land and seek other sharecropping arrangements where they could get a similar bonus in kind for their survival. Those remaining in the villages would continue to find access to rice fields in one way or the other (e.g., through private ownership), or belonged to the richer segments of the village population, which had enough alternative, non-farm employment opportunities to survive. For the majority however, the continuing "crisis situation" meant that survival increasingly depended on remittances from migrated family members, mostly men, who had found access to off-farm employment options outside the district. Out-migration as a survival strategy became very common, and tended to become supra-regional

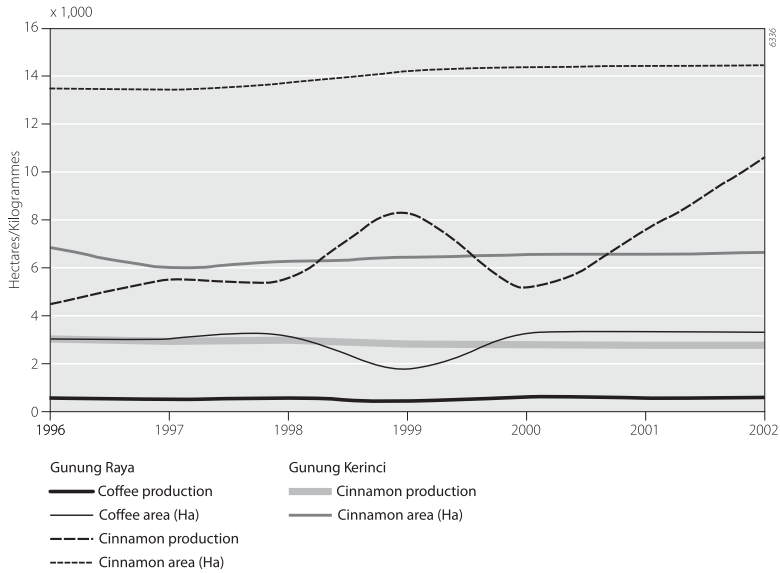
and eventually even transnational in nature, particularly to Malaysia. Under these hard conditions, it comes as no surprise that the way in which natural resources and tree crops were being perceived and managed, was quite contradictory as compared to the dynamics and conditions during the windfall period.

Dynamics in tree cover and forests during the aftermath of the crisis

In sharp contrast to the windfall period, the negative impact of falling prices for tree crops forced many households who had planted these crops to cut down both their coffee trees and cinnamon trees. On rejuvenated plots, vegetable cultivation would provide both food and cash, as vegetables were still making some profits. The most common practice however, was the large-scale harvesting of cinnamon trees in order to provide as much cash as possible for their own survival, but increasingly also to finance trips out of the district in search of employment, especially to Malaysia. Where the income from harvested cinnamon bark was not sufficient to cover the necessary expenses, the land would be sold as well. For a trip to Malaysia during 2000-2001, at least Rp 5 million, or about US $ 500, was needed. This amount included the costs to get a one-month visa, travel and subsistence costs for one month and payments to "job brokers" in Malaysia. Any additional cash from the large cinnamon bark sales would allow the purchase of food items and cover investment costs for a new agricultural cycle of commercial annual crops to support the family members staying behind. The persistent low prices for coffee resulted in the uprooting of coffee trees, and the plots were often not replanted after rejuvenation. Figure 3.6 graphically illustrates these dynamics. In 1998-1999, cinnamon production increased while coffee production decreased. The first wave in large-scale out-migration and hence the decrease in tree cover provided by cinnamon trees stopped in 2000 when the market was flooded with cinnamon bark, which could no longer be sold. Later that year, cinnamon exporters slowly opened their doors again to this commodity, and cinnamon export came again into full swing from 2001 onwards (explaining the increase in cinnamon production since that year).

Moreover, it was hardly surprising that households whose livelihoods largely depended on their upland fields were also causing a continuous decline of the tree cover in the buffer zones of the national park, as forest conversion for agricultural purposes here remained at a stable 3 percent per annum, according to WWF officials in Sungai Penuh. This may partly be explained by the fact that only the better-off households are able to cover the costs of forest conversion. During our last field visit, these costs would amount to Rp 5-10 million for 2 hectares, money that was mostly needed for other purposes, such as going to Malaysia.

Figure 3.6 *Movements in production and planted area for cinnamon and coffee in Gunung Raya and Gunung Kerinci subdistricts*



What changed dramatically, however, was the rate of illegal logging. During these hard times in Kerinci, businessmen from Padang in particular had no problem in hiring people who were living at the edge of survival, and were willing to deliver hardwood from the national park to them. Especially in Pelompek, where mechanisms such as sharecropping did not exist and the forest is relatively easily to access from the road, illegal logging was an attractive option for many of the poorest farmers.

Discussion and conclusion

The economic crisis and its aftermath seem to have severely tested the diversified pattern of livelihood sustainability and its resilience at both the household and communal levels. Furthermore, the crisis seems to have blurred the distinction between market and subsistence types of production, and between city and countryside. Our analysis has brought to the fore some unexpected dynamics and patterns in livelihood response mechanisms which can cope with and adapt to the effects of the economic crisis at the local level, which were neglected by macro-economic studies. During the windfall period, many families aimed at strengthening their socioeconomic position by raising or mobilizing re-

sources in a number of ways, ranging from strategies of mere survival to accumulation strategies. The favorable conditions, mainly brought about by the windfall profits, strengthened both the community relations of reciprocity and inter-household transfers. Increasing flows of cash among large numbers of households enabled the poorer segments of the population in particular to tap into widely available opportunities of paid labor, and it also induced an increase in risk-taking behavior by engaging in debts for investments in crop cultivation beyond the limits of their own farm. Where rice cultivation was concerned, high-yielding varieties were often planted to produce surpluses for home consumption and possibly also for cash accumulation. Seeking options for rice cultivation was a major pull factor for migration into Pelompek. In contrast to Pelompek, where access was open to anyone willing to pay rent, access to rice cultivation in Selampaung and Masgo was largely structured according to kinship relations. Here, access was mainly limited to farmers from within the district, and from areas with similar sociocultural conditions in relation to rice cultivation. As for upland fields, more risk-taking, commercial types of land management developed as well. Sharecropping deals were based on negotiations, on who brings in what types of inputs. By foregoing their bonus in kind, and in addition covering the costs for vegetable cultivation themselves (often through loans), sharecroppers wanted to reap the benefits from the entire yield of annual crops in order to accumulate cash.

Accumulation of assets could be observed especially among the richer segment of the farmers in the form of buying cinnamon trees with or without the land for speculative purposes, based on the assumption that in the near future the cinnamon bark would yield even higher profits. Several households were even willing to sell their cinnamon trees to get fast cash instantly for certain purposes, when the prices were high. However, the large majority would not sell and the tree cover therefore could largely remain intact, as all livelihood needs could easily be satisfied by cutting a few trees or reaping perennial crops, such as coffee or annual cash crops.

The aftermath of the crisis, however, initiated a dramatic reversal of the favorable conditions. Initially people could still rely on community support mechanisms as a coping strategy and invest in the fallback mechanism of rice cultivation to secure food needs. With the harsh conditions, community reciprocity and inter-household transfers eroded quickly, as the survival of individual households was directly at stake. Because of the growing demand, access to rice fields became severely limited and for co-villagers only, especially in Selampaung and Masgo. This further reduced survival opportunities for outsiders, like the Javanese immigrants, who had settled during the windfall period, and especially sharecroppers in the upland fields. These settlers now were not

only faced with dwindling meager profits from their cash crops, but also had to split their harvests into two. These developments caused a dramatic increase in out-migration from the district in search of employment elsewhere, not only by the temporary migrants, but also by the local residents who followed soon after. Depletion of assets in the form of selling stands of cinnamon trees or large-scale harvesting of cinnamon bark provided cash to finance the job-finding trips and the expenditures for the survival of the remaining family members. With the persistingly harrowing situation, livelihood survival increasingly depended on supra-local and transnational networks, particularly offering opportunities in Malaysia (which were often illegal). Under these conditions, a revival of inmigration towards the uplands from 2001 onwards appears highly contradictory, but this was attributable to a further worsening of the economic conditions, bringing forth the revival of old support mechanisms for upland cultivation. Newly arrived migrants explained that they were attracted to the upland areas to take advantage of the original two- to three-year bonus system which covers basic needs as a means of aid during the initial years of sharecropping. Better-off farmers, who often had access to off-farm activities and owned large tracts of land, were able to survive the slump in commodity prices and remain in their villages. Moreover, they were usually willing to support these new types of sharecroppers to rejuvenate their land with more lucrative crops. Rich landowners again were able to capitalize on the specific conditions during the aftermath of the crisis, by further accumulating land which was now being offered at relatively low prices, or by buying off their sharecroppers at bargain prices. Interesting enough, this preempted large-scale encroachment into the forest, as rich landowners could re-open recently acquired land for cultivation purposes. However, the reopening of land or large-scale harvesting of cinnamon bark by the poorer farmers in the aftermath of the crisis, entailed large-scale loss of tree cover in the buffer zones. These developments made clear that community support mechanisms in agrarian communities, such as those existing in Kerinci, do not necessarily disappear with advancing commercialization. They only tend to fade into the background, and seemingly obsolete mechanisms of community support can spring back into use, adapting to the specific circumstances of that time. Moreover, the economic crisis showed that an exclusive focus on economic and material aspects of cultivation practices does not exactly reflect the real conditions of food security and livelihood sustainability in rural areas. Households make use of complex combinations of various strategies, including the tapping into off-market, community, and kinship-based institutions to achieve and maintain livelihood sustainability.

Our analysis of the various response mechanisms, which, unlike the vast majority of crisis studies, goes beyond the phase of *krismon* as

such, has shown that the effects of external shocks and stresses may move the sustainability of people's livelihoods in rather unexpected directions. The assumption that growing poverty automatically leads to environmental degradation is open to debate, partly due to the degree to which people are able to tap into various kinds of community support mechanisms, which persist in its original or adapted forms.

4 The Economic and Ecological Crises and Their Impact on Livelihood Strategies of Rural Households in Yogyakarta

Muhammad Baiquni

Introduction

The Asian economic crisis that occurred in the middle of 1997 first struck neighboring countries, but it turned out that the epicenter of the shocks was in Indonesia. The wave of economic crises was made worse by a simultaneous ecological disaster, namely, the appearance of a long El Niño dry season that reached its peak in Indonesia. The long dry season directly affected the lives of small people. It was marked by forest fires, damage to natural resources, a critical food situation, a decline in nutrition and famine in a number of areas. Meanwhile, the economic crisis affected financial institutions, banks, and large companies to the point where they became bankrupt and closed down, which influenced the lives of businessmen and workers in the modern economic sector (Baiquni & Susilawardani 2002).

Within a short time the economies of neighboring countries had been restored, but Indonesia faced a crisis that continued and was followed by even worse social unrest and political turmoil. The economic and ecological crises caused poverty and vulnerability to rise sharply, especially among urban communities but with a spin-off in rural areas at a later stage. According to National Statistics BPS, the number of poor people rose from 18 percent to 23 percent in the period between February 1996 and the beginning of the crisis in February 1997. It then rose rapidly to 37 percent in September 1998. Shafiq Dhanani and Iyanatul Islam (2002) give an even higher estimate, calculating the change to have been from 29 percent in February 1997 to 44 percent in September 1998. Prices then gradually began to stabilize, with food prices decreasing relatively, which brought the figure for poverty down to 34 percent in February 2000.

The crisis, however, did not always constitute a calamity of the kind indicated by the bankruptcy of conglomerates, the closing down of large factories, the dismissal of workers, and the increase in the number of poor and vulnerable people. In rural areas there was a variety of symptoms, and some places actually obtained multiple advantages, especially

those villages that produced export commodities like cocoa, coffee, cloves, and spices. It was reported that, during the period of the crisis, large numbers of rural people in Sumatra and Sulawesi who planted export crops went to the cities after harvest to purchase new electronic equipment, motorcycles, and cars, while the number of rural people who went on the pilgrimage increased. Rural people who were still subsistence-oriented also did not feel the crisis directly; in other words, the impact of the crisis on rural areas was slower than in urban areas (Gérard & Ruf 2001). Thus the agricultural sector in rural areas again became an alternative that could absorb the unemployed who had been discharged from urban industrial and services sectors, which were experiencing a slump and bankruptcy.

The concept of resources covers a wide area and is something that is dynamic, so there is a possibility that changes related to information, technology, and organization can lead to a situation where something that was originally considered to be useless becomes useful and valuable (Reksohadiprodjo & Pradono 1988:6). On the basis of this concept, there was a shift in the value of resources that essentially followed the laws of market demand (economy) and the laws of scarcity or capacity (ecology).

This study focuses on the formulation of a problem that is presented in the basic question: "How did village communities expand their livelihood strategies during the crisis and how were management and utilization of their resources improved towards sustainability?" This can be broken down into these more detailed questions:

1. What were the effects of the economic and ecological crises in the Yogyakarta countryside?
2. What were the household livelihood strategies in rural areas and what was the response to the economic and ecological crises?
3. What was the impact of household livelihood strategies on the sustainability of systems of rural resource management and utilization?

This study attempts to find answers to these questions by using a combination of participatory rural appraisal and in-depth interview survey methods. Quantitative and qualitative data were collected (Brannen 1997) in a participative way by involving part of the community together with the researcher in a learning process (Chamber 1996; Fernandes & Tandon 1993). The author then undertook the writing up of the process and results obtained from the study.

The effects of the crises on the Yogyakarta countryside

The ecological crisis really represented a downward trend in the quality of resources, particularly in soil fertility and water supplies, and was evi-

dent in the steady decline in agricultural production. The economic crisis that is referred to here is the crisis that occurred from the middle of 1997 onwards, marked as it was by a fall in the value of the rupiah against foreign currencies, the bankruptcy of banks and big companies, and a sharp rise in unemployment and poverty. The economic and ecological crises referred to are the monetary crisis that occurred in the middle of 1997 together with a water crisis caused by a long *El Niño* dry season, which led to crop failure and a food crisis in several parts of Indonesia. Ultimately, these two crises came together in a total crisis that also included social and political aspects.

In the Yogyakarta (DIY) countryside, the ecological crisis in the form of a long dry season was felt more directly as a disaster than was the economic crisis. The occurrence of a long dry season really represented a natural event that takes place in a cyclical way over a period of seven to ten years, as had happened in 1987. As a consequence, many farmers experienced big losses because of crop failure, which meant loss of capital and income during the planting season, which caused losses for farmers. For farmers in upland areas like Gunung Kidul in particular, the annual drought means that the period of food shortage occurs during the dry season.

The ecological crisis also took place slowly and was marked by a decline in environmental resources and sociocultural changes that were related to the introduction of modern agriculture through the Green Revolution. Modern agriculture aimed to increase food production through the use of high-yielding seed, technical irrigation, intensification involving chemical fertilizers and pesticides, mechanical equipment, and farm credit, which encouraged farmers to begin cultivating rice intensively. After efficiency in agriculture had been achieved, new problems arose because of the existence of advanced technology. Among the problems that had to be faced were the absence of variation in planting patterns, steadily declining soil fertility, and the lack of balance in the *sawah* (wet rice field) ecosystem, which led to the appearance of pests and disease. More than that, as Shiva (1991) noted, there were signs of the marginalization of women workers because of the Green Revolution.

The mononculture of rice, which was planted three times a year with relatively rare changes in cropping patterns, resulted in a steady decline in soil fertility, especially since the use of artificial fertilizers and inputs like insecticide and herbicide caused the soil to become "addicted" to them. The excessive use of chemical fertilizers gave rise to poisonous residue that settled in the soil, killing organisms and soil life and ultimately reducing soil fertility. This in turn meant that the rice plants did not grow well and hence output dropped.

The very noticeable lack of balance in the ecosystem enabled common pests and plant diseases that could cause crop failure to appear. One example is the plagues of rodents which often ran wild in the *sawah* because creatures like snakes that once preyed on them had become extinct, either because people hunted them or because of degradation of the *sawah* ecosystem. Another example is the *wereng* (borer) pest, which had been dominant in the 1980s and which emerged again in many places in rural DIY during the crisis. At that time the price of pesticide rose dramatically, to the point where farmers reduced the amount and frequency of use. The result was that outbreaks of pests and diseases like *wereng* returned.

Coming together as they did, the dry season and the accompanying economic crisis had an impact that was multiplied many times. The creeping approach of the economic crisis in the countryside took place gradually and rarely caused shocks that directly influenced household livelihood strategies. The economic crisis was clearly felt in the rise in production and transportation costs and the increase in prices. It was certainly heavy, but the majority of basic needs like food could still be met by the household itself.

The economic crisis was only felt in villages several months later when there was an increase in the cost of living, education, health, and production inputs (after the fertilizer subsidy was removed), and when oil-based fuel rose in price.

Added to this was the fact that family members who had originally worked in the city were forced to return to the village because urban companies had business difficulties and they had been dismissed. The village became a place of shelter for those people who had been affected by the impact of the economic crisis in urban areas and agricultural activities became a kind of temporary "shock absorber" for workers who had lost their jobs (Kutanegara & Nooteboom 2001). While awaiting an improvement in conditions, they undertook reconsolidation with household members in the village.

The government introduced the JPS (social safety network) through a number of programs in fields like food security, health, education, and small and micro-economic undertakings. These programs were indeed carried out but it would seem that the follow-up was not very successful. Perhaps one temporary success of the JPS programs was that they formed a precondition that encouraged the social stability needed to assist the Indonesian nation in carrying out the 1999 general elections in a more open and democratic fashion.

Ultimately the economic crisis was indeed felt in rural areas, where it exerted an influence that extended to the household level. Many village people, however, adopted an attitude of plainness and simplicity in their lives that made the associated difficulties seem like ordinary happen-

ings. On the whole, the economic crisis caused a slight shock or, more accurately, a shake that gave rise to new dynamics in rural lives. It would seem that the diversification that had emerged in the rural economy over the past few decades was able to preserve the resilience of the rural economy. The responses of rural households to the crisis, however, showed variety. Each household had ways of responding in its livelihood strategy to the internal and external situation during the crisis. These phenomena are interesting to examine in their connection with the variety of resource conditions that exist in the five Yogyakarta villages selected for case studies.

Five village case studies

Socioeconomic and environmental characteristics

In order to obtain a greater understanding of how the dynamics of the economy function and of the ways in which communities in different ecosystems manage their resources, five villages were chosen as case studies. The choice of the study villages was based on physiographic variety and agroecosystems that in a simple way reflect upland villages, irrigated villages, and combinations of the two.

Tepus village, which is located in karst hills, and Glagaharjo village, which is on the slopes of the Merapi volcano, are upland villages. In general, land use in these villages consists of dry fields (*tegalan*) that are planted with annual food crops and mixed gardens containing perennial crops. Besides that, there are rain-fed rice fields in which rice or other food crops are normally cultivated in the wet season with secondary crops in the dry season. Farmers cultivate several crops in rotation using the *tumpanggilir* system as well as a variety of crops that are planted together or intercropped on one stretch of land in a system known as *tumpangsari*. The third village, also in a hilly area, differs from the first two. Sidoharjo village is located in the Menoreh Range. It is unique because it has dry and wet land, that is, it has *tegalan* used for mixed gardens as well as terraced rice fields in which rice is planted.

The two irrigated villages chosen for case studies are Tirtohargo, which is situated on the coast, and Sendangrejo, which is in a lowland area where rice is cultivated in irrigated fields throughout the year. Although both are lowland villages, they have different micro ecosystems. The agricultural land of Tirtohargo village was once a back swamp of the kind frequently found behind coastal sand hills or beach ridges, while the agricultural land of Sendangrejo village consists of part of the Merapi volcanic alluvial foot plain. A general picture of the five case studies is presented in table 4.1.

Table 4.1 *Profiles of five case study villages in the Special Region of Yogyakarta*

Village (Subdistrict District)	*Tepus (Tepus, Gunungkidul)*	Glagaharjo (Cangkringan, Sleman)	Sidoharjo (Samigaluh, Kulonprogo)	Tirtohargo (Kretek, Bantul)	Sendangrejo (Minggir, Sleman)
Village typology	**Upland villages**		**Combination**	**Irrigated villages**	
Slope	25->40% (steep and very steep)	10-25% (gentle to rather steep slopes)	15 - >40% (rather steep to very steep)	<8% (flat)	<8% (flat)
Physiography	karst topography of Gunung Sewu	volcanic slopes of Merapi	undulating, folded hills	alluvial coast, back swamp	volcanic alluvial plain of Merapi
Original rock	limestone	volcanic material	andesitic breccia, sand-stone, tuff	alluvial material	sedimentary volcanic material
Soil type	mediter-ranean	regosol	latosol	regosol and cambisol	regosol
Rainfall (mm)	1,750-2,000	2,500-2,750	2,250-2,500	1,750-2,000	2,000-2,250
Village area (ha)	28,555	7,950	13,745	3,620	5,980
% Farmland	93.1%	36.0%	58.2%	54.0%	73.1%
% Farm households, 1993 census	92.4%	100%	100%	83%	86%
Major land use	dry fields and rain-fed rice-fields	dry fields and home lots	dry fields, rain-fed rice-fields, terraced rice-fields	back swamp rice-fields and dry fields	technically irrigated rice fields
Main economic activities	dry-field farming, animal husbandry	traditional farm and animal husbandry	dry farming, gardens, animal husbandry	subsistence rice-growing and horticulture	subsistence agriculture and rice cultivation
Accessibility	low	low	low	high	high
distance to subdistrict	5 km	3 km	5 km	4 km	5 km
center	22 km	18 km	42 km	14 km	15 km
Distance to district center	48 km	23 km	24 km	23 km	14 km
Distance to Yogyakarta					
Population in 2000 (people)	9,624	3,256	5,068	2,867	9,082
Population density (people/ sq. km)	337 low	406 low	368 low	792 medium	1,519 high

Source: Atlas Sumberdaya (1990), agricultural survey (1993), economic survey (1996), and primary data (1998, 2000, 2001)

The demographic and socioeconomic characteristics of these rural areas are closely related to expansion and development from within the villages themelves as well as the expansion that has occurred outside them. Data from the 1990 and 2000 population censuses show variations in the percentages by which farm households have changed. In upland villages located relatively far from the city center, the changes have not been very great. In Tepus and Glagaharjo the majority of households are those of farmers. In Sidoharjo the same thing can be seen; there have not been many changes and 90 percent of the households belong to farmers. In the two irrigated villages, which have easier access to the city, the percentage of farm households is smaller and fell between 1990 and 2000; in Tirtohargo the drop was from 89 percent to 70 percent and in Sendangrejo from 82 percent to only 66 percent.

The changes that have occurred in the irrigated villages, which have easier access to the city, show rapid diversification towards non-farm activities (Rotgé & Rijanta 1996). Many of the better-off farm households have expanded non-agricultural activities like trade and industry as well as services. Among households with members who have enjoyed higher education, some people have obtained work as government and private-sector employees or else have developed their own businesses. Numbers of agricultural laborers and very small farmers have chosen employment outside agriculture as factory workers, construction workers, odd-job laborers and intermediate traders or middlemen, or else have established food stalls (*warung*). These changes have been encouraged by more open market access and opportunities, particularly since work as an agricultural laborer or small-scale farmer can no longer be relied upon as a means to meet household needs.

Variations in livelihoods in each village show an economic diversity that reflects assorted and different employment opportunities and the availability of local resources. Basic jobs and additional jobs are sometimes combined and there are also people who have a number of jobs, all of which they regard as their main job. For example, a farmer might also have additional employment as a maker of handicrafts, or an agricultural laborer may at certain times be employed as a construction worker. In the wide sense, agricultural activities also include animal husbandry, which generally constitutes an supplementary activity. The raising of cattle and goats can represent savings for the farmer and can also supply an additional agricultural input in the form of animal manure. Expansion in animal husbandry in dry-farming villages can help to reduce population pressure on the land. It can also be linked to conservation and land improvement efforts involving inputs of animal manure that are distributed to upgrade land in a critical condition. This practice is common in Tepus, Glagaharjo, and Sidoharjo, which have upland characteristics.

Diversification in employment is particularly noticeable in villages that have limited natural resources. Employment as a construction worker, for example, is generally an additional job. Tepus, followed by Sidoharjo and Glagaharjo, has a rather high proportion of construction workers. This shows that dry-farming villages have the potential to supply a large number of construction workers. A combination of agricultural and non-agricultural employment has developed as a means to maintain livelihoods so as to meet daily needs. Households that have sufficient capital undertake employment in trade as buyers and sellers of farm produce and assorted goods and in the provision of services. Cottage industries, which generally involve the processing of raw materials obtained from agricultural commodities to make finished or partly finished goods, are common, particularly in the case of food products. The non-farm work undertaken by poor households consists of construction work or odd-job laboring, which is done in the village but in some cases involves mobility back and forth to the city.

The contributions made by family members who work in a city or even abroad can support the family in the village. Young rural people show a strong interest in overseas employment. Even though in this survey only one household member was found who had worked overseas, all research villages had residents employed abroad as overseas workers (TKI). This indicates that rural people have interacted with the outside world and points to basic changes in views about their own economy. They do not depend on local resources alone since they are beginning to access outside resources in order to provide an adequate living for households in the village.

The role of institutional systems

The utilization and control of rural resources, in particular of land, are still the foundation of rural household livelihoods. The distribution of control over land in each village can reveal access to the main resource, that is, to the availability and use of land. Control over land is closely related to ownership of land and the way in which the land is managed. Institutional systems reflect these relationships and how a number of related parties operate in the use of resources in farm and non-farm systems in rural areas.

Control over irrigated land in Tirtohargo and Sendangrejo is relatively limited on the whole, with average holdings around 0.2 hectares. In the upland villages dry-field holdings range from 0.2 hectares to more than 1.0 hectare. Home-lots are important for the production of commodities needed in daily life and also for the raising of large livestock and poultry, besides being the land on which houses and associated buildings stand. In Tepus, houses are generally grouped together and stand close

Table 4.2 *Average control over various types of land (in square meters)*

Type of land use	*Tepus*	*Glagaharjo*	*Sidoharjo*	*Tirtohargo*	*Sendangrejo*
Irrigated land	859	0	2,901	1,730	2,708
Dry fields	8,840	3,244	1,998	50	0
Dry land	4,831	0	0	0	0
Gardens	0	380	681	0	0
Home lots	574	1,474	2,552	440	862
Total area of land controlled	15,104	5,098	8,132	2,220	3,570

Source: Primary data, 1998 and 2000 surveys

to each other, which means that home lots are small in area. In Tirtohargo, home lots are also relatively small, occupying as they do the sandy beach ridge land. They are planted with perennials like coconuts and *mlinjo*. Unlike the situation in these two villages, home lots are larger in Glagaharjo and Sidoharjo.

Access to these resources is analyzed by widening the understanding of institutions in the context of control over land, work relationships and trade in products. The institutions referred to are not always organizations with systematic administration but in this description they include patterns of work relationships which have already become social traditions and whose rules are extremely flexible.

Land property rights are the basis for the development of a system of control and management institutions in rural Yogyakarta. In general, farmers do not yet have land rights that are legally standardized in the form of certificates. The agricultural land controlled by farmers is bequeathed from one generation to the next and is also bought and sold among farmers in oral transactions that are recorded in the village office. The document that is usually held as an indication of control over land is the so-called *Letter C*, which is officially stamped in the land registration book in the village office.

Today's individual rights originated from a number of management and control sources. *Yasan* land was land that was operated by farmers and came from the clearing of forests or the enrichment of ownerless land. Individual ownership rights originating from *yasan* land contained the understanding that efforts had been made to clear land with forest status, while attempts had been made to enrich the land or make it fertile, and control over cultivation or development had been carried out until it became productive.

Individual ownership rights can also have their origin in what was formerly known as *gogolan* land, that is, community-owned land that was shared out permanently or in turn for cultivation. Originally this was traditional-law land that could not be bought or sold because it was common property, but changes introduced after ratification of the Basic

Agrarian Law of 1960 altered its status to land with individual property rights; those rights were given to the most recent cultivator. *Titisara* land is village-owned agricultural land that is usually sharecropped out or rented out in a routine way through an auction. This land is often referred to as village treasury land, and as such is regarded as a village asset that can be cultivated by local farmers, the purpose being to produce development funds and routine funds for management of the village. *Bengkok* land is village-owned agricultural land allocated to village officials, in particular the village head, as recompense for the performance of their duties and obligations while they are in office. In general, this land is located in the fertile, strategic part of the village, for which reason it can influence the industriousness of village officials.

The various types of land ownership can affect the structure of institutions related to control over and the operation of agricultural land. On the whole, the most common are sharecropping and rental; the mortgaging system is no longer found in the research villages. Sharecropping is the system of land control and management encountered most often in the study areas and is particularly common in the irrigated villages. The motivation behind sharecropping varies. Farmers who own large holdings usually undertake sharecropping to reduce the burden of care and labor that has to be given to agricultural activities, in view of the fact that wealthy farmers usually have non-farm activities. For landowners who work as village officials and public servants or private employees without time to cultivate the land, sharecropping is often used as a means of managing their assets.

Sharecropping is also frequently linked to the availability of labor, which is increasingly scarce in the village, even though prevailing wages are relatively high by comparison with the value of the rice that is produced. Landowners whose holdings are not large enough for the owner to manage them himself with paid labor prefer sharecropping, which is a simpler system that has proved to be sustainable. Sharecropping as observed by Geertz (1963) can also function as a system of poverty sharing between those who have sufficient land and those who do not.

Tenant-cultivators are not only small farmers. There are also well-off farmers who have capital and cultivate agricultural land intensively. The intensive use of irrigated land for horticultural crops requires sufficient land to obtain extra output. For that reason, farmers use the sharecropping system in conjunction with landowners who choose not to cultivate their own land. This situation encourages tenant-cultivators to meet the economic requirements of wet rice cultivation by working their own land and at the same time also cultivating land that is not their own property on a sharecropping basis.

In addition to sharecropping, a land rental system also exists among farmers, especially on land that is cultivated intensively with commer-

cial crops. The rental system enables lease-holders, who are usually big farmers, to manage the land according to the principle of profit maximization. In operating rented land, big farmers or farmers from other villages manage it in a way that yields a profit in the shortest possible time or during the period of the agreement. Big farmers tend to plant commercial crops and to apply very high chemical inputs so as to obtain the maximum output. A large profit can be obtained if the scale of the undertaking is intensive, both in the area of land and in the form of management.

The conclusion from this analysis of institutions related to land control and management is that some farmers prefer sharecropping to the rental or mortgaging of land. Sharecropping allows for closer links between the landowner and the tenant-cultivator in deciding how the land is to be managed. Unlike sharecropping, rental enables the tenant-cultivator to work the land on the principle of profit maximization. If this means a very high input of chemicals to ensure maximum output, he will use them in order to get the most from the land during the rental period. The risk of land degradation after the agreement has finished is the responsibility of the landowner.

Changes in livelihood strategies and responses to the crisis

Studies of livelihood strategies are fundamental to understanding household responses to the crisis. The term "livelihood" is defined as the capacities, assets, and activities needed to support household members. The term includes a wider interpretation than mere income or employment opportunity, because "livelihood strategy" covers complex relationships between capabilities, assets, and activities and environmental conditions, technological developments, and social dynamics (Singh & Gilman 1999; Ellis 2000; Titus 2003; Start & Johnson 2004).

Livelihood strategies were studied in five villages that have different agro-ecosystems and resources. Environmental conditions, resources, and community and household dynamics displayed different combinations of relationships between a variety of components and choice of livelihood strategies. The discussion of spatial diversity and social stratification in each unique household provides an understanding of the variety of livelihood strategies and responses of households at the time of the crisis.

Three livelihood strategies

The household livelihood conditions and strategies in this study have been grouped into three types, namely, survival, consolidation and accu-

mulation strategies (White 1991). To determine the strategy adopted by each household, three aspects were examined, namely, its capabilities, assets, and activities. "Capabilities" refers to the pattern of resource use, which is seen in the availability of labor, capital, and technology. Besides this, there is the use of local and external resources that are integrated to support capabilities. The capabilities of a household are reflected in its level of income and in its willingness to take risks.

"Assets" are related to ownership of and access to resources and to the relationships that enable access to be gained. Assets cover tangible things like land, machinery, and production equipment but also take the form of things that are not visible such as skills and social status in the community, which become apparent in context.

The term "activities" refers to productive undertakings intended to fulfill basic needs and, if possible, to bring about an increase in welfare. The success of activities is reflected in the level of profit and income, which is very much determined by the scale of operations, the intensity of capital, the use of technology and the existence of skills. The criteria outlined above have been arranged in a table that identifies profiles of household strategies (annex).

Households with survival strategies

Households with survival strategies tend to own very limited land and other capital assets, which means that in seeking employment members depend on their own labor and on the limited skills that they possess. On the whole, their jobs and social status are relatively low and the income that they receive is inadequate. Survival households tend to maximize the use of their resources, especially labor, in addition to their own limited land and capital, to meet their needs at a subsistence level. Thus they are capable of meeting their basic needs only over the short term.

The important characteristic of these households is their expenditure pattern, which is dominated by the fulfillment of basic food needs. These are frequently the major item in the household budget. Survival households often cannot afford to make social contributions, but instead they provide labor for various social activities such as weddings, funerals or mutual-assistance undertakings to construct public facilities. On the whole, the possessions of these households are limited to a small, simple house. Some own a very small piece of productive agricultural land but many are landless. For that reason they are often forced to look for multiple jobs and hence many of their members work as agricultural or construction laborers. In brief, they sell their labor and do whatever that comes up. The access of survival households is also limited; even if they are able to obtain access, they do not have suffi-

cient assets and capabilities to reach out for that access and take the risk of starting a new undertaking.

Households with consolidation strategies

On the whole these households have sufficient land and capital assets to meet subsistence needs. They also have a higher social status than those with survival strategies. Their income, too, is greater and is sometimes based on diversified agricultural and non-agricultural activities, which means that they have more additional income regularly or in certain seasons. Sources of income are located not only in the village itself but also in the city in the form of trade undertakings or commuting for employment reasons. Daily needs have been adequately met, while shopping for secondary and tertiary requirements exceeds shopping for primary necessities.

Since these households have already exceeded fulfillment of their basic needs, they are freer to meet other appropriate needs such as education, health, transportation, and recreation. Consolidation households generally own a motorcycle and have complete household equipment, including a radio and a color television. The assets that they possess, besides being the means of production, are also the means of fulfilling secondary and tertiary needs more comfortably. These households can afford to expand and consolidate by developing resource use with medium and long-term objectives in mind.

Consolidation households whose members are still young and dynamic have the capacity to push their undertakings to the limit so that they increase, by comparison with households whose members are already old or retired. Nevertheless, their capacity to take risks is limited because of their limited production surplus and working capital. As a consequence, consolidation households depend on income sources other than their own agricultural activities.

Households with accumulation strategies

These households have greater capacity, assets, and ability to meet needs. Using all of their capacity, they are able to accumulate capital and to improve their welfare to a higher level than households in the other groups. Productive activities yield a rather large surplus and are oriented towards the long term in order to extend their access to resources and increase their capacity to accumulate capital. If they make investments, accumulation households are driven by motivation to increase profit and accumulate capital within a certain time.

The accumulation strategy is characterized by control over large land resources and a lot of capital. Even so, not all of their assets and capital

are operated by the households themselves; some are rented out or operated on a profit-sharing basis by other households, especially survival households. Thus the social and economic networks of accumulation households are wider than those of others and their social status is higher.

Accumulation households are very responsive to external changes, whether they represent an opportunity or pose a threat. These households are also quite daring in taking risks by responding quickly to a changing external situation. They also have the courage to make long-term investments, provided that the latter are profitable in their calculations. This willingness to invest is evident in their tendency to shift investments from the agricultural sector to the more dynamic and profitable non-agricultural sector, even though the risks are greater.

Patterns of strategy change in the crisis period

Changes in the livelihood strategies of rural households in facing the economic crisis are interesting phenomena to study. This research is based on data that were collected by the household survey method at the beginning of the crisis, that is, in June and July 1998; the survey was then repeated after a period of five years using the in-depth review method with retrospective questions in April and May 2003. The people who were interviewed in depth came from 60 households, which made it possible to examine the pattern of coping responses of the three livelihood strategies, namely, accumulation, consolidation, and survival.

The various dynamic changes that occurred during the five years between 1998 and 2003 as presented in table 4.3 show that changes in livelihood strategies were not very striking in total number. But when they are examined more closely, it is clear that rural households were quite dynamic in maintaining and increasing their strategies. The dynamics of these strategy changes were influenced not only by the economic crisis. A detailed examination reveals the influence of the household's life cycle, both in those households that experienced a rise and in those that experienced a fall in the ability of household members to carry out their livelihood strategies.

The number of households with an accumulation strategy fell from twelve to ten, with the drop occurring mainly in Tepus, Sendangrejo, and Glagaharjo. The other two villages, Sidoharjo and Tirtohargo, which have horticultural commodities and perennial tree crops, experienced a rise in the number of households with an accumulation strategy. This was made possible by the fact that during the crisis, the prices of horticultural and perennial products rose.

A drop also occurred in the number of survival households from 28 to 25. The phenomenon of a fall in survival households during the eco-

Table 4.3 *Changes in livelihood strategies in rural households during the 1998-2003 crisis*

Strategy	*Year*	*Tepus*	*Glagaharjo*	*Sidoharjo*	*Tirtohargo*	*Sendangrejo*	*Total*
Accumulation	1998	4	2	1	1	5	12
	2003	1	1	3	2	3	10
Consolidation	1998	2	4	6	5	3	20
	2003	5	5	4	6	5	25
Survival	1998	6	7	5	6	4	28
	2003	6	6	5	4	4	25

Source: 1998 survey and 2003 in-depth interviews

nomic crisis can be explained by the fact that a number of households succeeded in overcoming the crisis and moving up by changing their strategy from survival to consolidation. The number of households with a consolidation strategy actually rose from 20 to 25

In Sidoharjo some households were in fact able to raise themselves from consolidation to accumulation strategies, but the number of survival households remained the same. Many of the residents of Sidoharjo, which is relatively remote, had a combination of agricultural and non-agricultural activities. Their simple lifestyle is reflected in their houses and furniture, which are made from local materials. The most striking example of their attitude was the effort they made to educate their children to the highest possible level. They also had wide social networks, which is revealed in the fact that there were household members of productive age who worked in the city and there were even some who had sought work abroad. These people sent money back to the village regularly to support family members.

In Tirtohargo there was an increase in the number of accumulation and consolidation households and a reduction in survival households. This village enjoyed the rise in horticultural prices during the aftermath of the economic crisis. Besides that, horticultural farmers (specifically those growing onions and chilli) received support from policies adopted by the Bantul District government through price stabilization and improvements at harvest time. Farmers are usually disadvantaged by the price manipulations of middlemen who function as operators in a free market system, for the prices of farm products fall at harvest time. Improvements in the position of farmers, which were supported by these pro-farmer public policy innovations, offered hopes of betterment for producers in Bantul.

Tepus is in an infertile karst area with low natural resource productivity. The majority of the households are at the survival strategy level, which is evident in the simple houses and furniture and in the people's occupations, which generally involve farming and the raising of livestock on barren land. During the crisis some of the households adopted

a survival strategy, while some that had originally been accumulation households fell back to a consolidation situation. On the whole, daily earnings are obtained from agricultural activities, while a small number of households catch fish and shrimp in coral reefs and along the beach in certain seasons. Income from animal husbandry is obtained over a period of years. Livestock function as savings that are used to cover large expenses such as children's education, house construction, medical treatment for a sick member of the household, circumcisions, and weddings.

Sendangrejo is a "rice-granary" village in which rice can be planted three times a year. Agricultural activities had already experienced a lengthy period of stagnation due to the fact that holdings are small and rice is not a sufficiently profitable crop. During the crisis most of the households adopted a consolidation strategy. Some of them had formerly been accumulation households but had dropped down to the consolidation level. The resources of this village are no longer capable of accommodating the increasing population density, as a consequence of which the incomes and livelihoods of the village people are really supported by the urban economy. Village access to Sleman District and Yogyakarta City is quite good. Besides the good condition of the road, there is also very good rural transportation. For that reason, many people in the village are well-off, as they work in the city in the non-agricultural sector. They commute daily, leaving their homes in the morning and returning in the afternoon. Much of the agricultural land owned by the group of people who are employed in the non-agricultural sector is rented out or else is worked jointly on a sharecropping basis with local small farmers and agricultural laborers.

Glagaharjo is a village of mixed gardens on the slopes of Mt. Merapi. Most of the households operate at the survival level. During the crisis there was an increase in the number of households that undertook consolidation. Some of them were once accumulation households but the crisis forced them to change their strategy to that of consolidation. Returns from mixed-garden farming and from animal husbandry are not sufficient to improve their quality of life. Farmers cultivate an assortment of crops in their gardens and they are not attracted to monoculture. As a consequence of maintaining the mixed-garden ecosystem, some household members have to do non-agricultural work either in the village or in the city.

The responses of households in coping with the crisis

There was considerable diversity in the responses of households with different livelihood strategies in the way they handled the crisis. In this research a number of response variables was examined. These have

Table 4.4 *The value of elements related to consumption responses*

	CE	*EH*	*EP*	*IL*	*HS*	*LP*
Accumulation strategy	0.60	0.90	0.50	0.50	0.50	0.60
Consolidation strategy	-0.22	0.17	0.43	-0.22	-0.43	0.26
Survival strategy	-0.70	-0.07	0.52	-0.74	-0.85	0.78

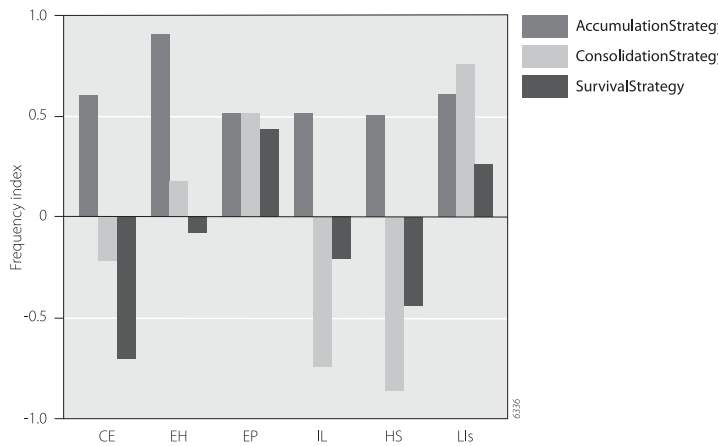
CE = consumptive expenditure (rising or falling)
EH = educational and health expenditure (rising or falling)
EP = employment pattern (diversification or specialization)
IL = income level (maximizing or maintaining)
HS = household savings (rising or falling)
LP = labor participation (rising or falling)

been divided into two types, namely, the consumption responses and the production responses adopted by households during the crisis. The term "consumption responses" refers to the tendency for resource use and the use of finances (costs) to rise or fall to cover household needs. "Production responses" are the various tendencies for resource use and the use of finances (costs) to rise or fall in order to yield products.

Consumption responses

The various elements or variables constituting the consumption responses are presented in table 4.4 and figure 4.1. The values shown indicate the relative frequency of positive and negative responses for each of the elements. The consumption responses of households with an accumulation strategy show that all elements have positive values. This means that these households increased their expenditure on consump-

Figure 4.1 *The value of elements related to consumption responses*



tion because they could in fact afford to pay the higher prices. One interesting phenomenon is the fact that in all three household types, efforts to mobilize the participation of labor have a positive value and that during the crisis the mobilization of members of accumulation households appeared to rise rapidly. Among survival and consolidation households, a high level of household labor participation was normal, whereas it was only in a crisis situation that accumulation households required household members to work more than in ordinary times.

Expenditure on the consumption of food, energy and transportation increased, as did expenditure on education and health, which are basic household needs. This rise in household consumption expenditure was also accompanied by an increase in income, which means that the need for greater consumption expenditure could be offset by additional income acquired by expanding diversification, increasing labor use, or making the management of resource and capital assets more effective.

The consumption response of consolidation households shows variations in the fall and rise of a number of related elements. Expenditure on basic needs like food, energy, and transportation tended to fall or be reduced but educational and health needs could not be reduced, or in other words they experienced a slight rise. On the whole, the level of household income also fell, which means that, although there was a nominal rise, income was still not sufficient by comparison with needs.

Household savings also fell as a consequence of the price rises that had to be met while the crisis continued. In order to cover their needs, these households expanded efforts to mobilize more labor than before the crisis. Besides that, among consolidation households that had previously been survival households, a number of young households displayed progressive dynamics. At the same time, the fact that some consolidation households had previously been accumulation households reflected the life cycle of family heads who were getting older or who had retired.

The consumption response of survival households on the whole involved difficulties, which are reflected in the negative value of elements. These households had to reduce certain consumption expenditure, including expenditure on basic needs in the form of food, energy, and transportation but they made real efforts to keep their children at school and to meet health expenses. Survival households also tried to push ahead through diversification in their undertakings, but all they had to offer was their labor. Labor mobilization increased both in the amount of working time and in the participation of more family members, but income levels remained low. In fact, there was a tendency for household savings to decline sharply, which meant that these households experienced difficulty in meeting the requirements of life during the crisis, despite the fact that they economized on consumption expenditure and mobilized labor more actively.

Table 4.5 *The value of elements related to production responses*

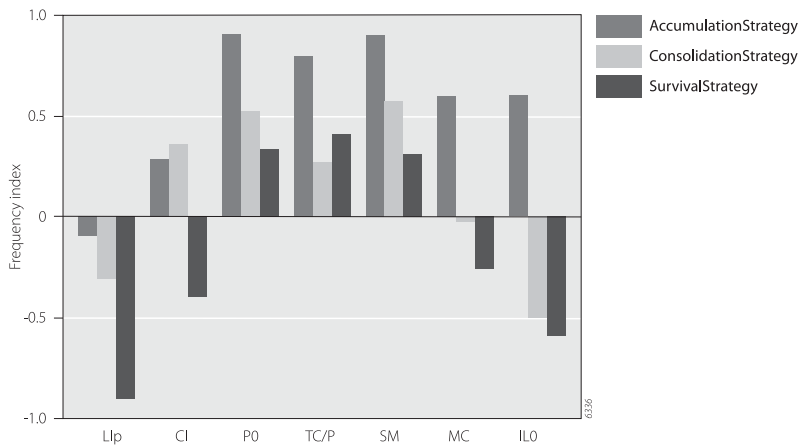
Strategy type	*LIp*	*CI*	*Po*	*TC/P*	*SM*	*MC*	*ILo*
Accumulation	-0.10	0.30	0.90	0.80	0.90	0.60	0.60
Consolidation	-0.30	0.35	0.52	0.26	0.57	-0.04	-0.52
Survival	-0.93	-0.41	0.33	0.41	0.30	-0.26	-0.59

Lip = labor input/input of hired labor (rising or falling)
CI = capital input/capital including technology (rising or falling)
PO = production output (rising or falling)
TC/P = types of crops or products (rising or falling)
SM = share (production) for the market (rising or falling)
MC = marketing channel and destinations (expanding or decreasing)
ILO = investment in land and other production means

Production responses

Table 4.5 and figure 4.2 offer insight into the relative frequencies and directions of the productive responses to the crisis. Production responses in general had positive values and there was a rise in both inputs and outputs. Production inputs, that is, capital and the necessary technology, certainly increased greatly, becoming more expensive than before the crisis. Production outputs also tended to rise, the result being that households could afford to cover their needs during the crisis. The types of crops and commodities that were produced became increasingly varied, which revealed a steadily rising trend towards diversification in business activities. Overall, efforts to economize on farm inputs and to increase the use of the household's own labor before employing hired labor were also apparent. Attempts to market products

Figure 4.2 *The value of elements related to production responses*



also rose, in connection with the increasingly wide market network as a form of increased access, ability to reach markets and the determination of rural producers to have direct access to markets or consumers.

Accumulation households tended to reduce hired labor in both their agricultural and non-agricultural production activities, while inputs of capital and all other production elements tended to rise during the crisis. Attempts to diversify increased in the context of efforts to share burdens and risks while they were in a crisis situation. Almost all households increased the volume of production and expanded their efforts to reach wider markets. They did this to offset market needs and growing consumer demand for rural products as substitutes for imported agricultural products. In addition, efforts to reach markets were intended to reduce dependence on middlemen by selling directly to markets or consumers. Accumulation households were also able to increase capital investment to raise production and investment in the form of household assets.

Consolidation households showed a trend similar to that apparent in accumulation households but the positive values were lower, meaning that only certain households were able to increase capital input, production volume and the types of commodities or goods that they produced. Expansion in market networks generally remained the same as it had been originally, whereas production investment and investment in the form of house improvements or the purchase of jewelry declined, which meant that these households gave priority to meeting basic needs and additional secondary needs that were related to greater production.

Survival households tended to use their own labor and to make a drastic reduction in hired labor to carry out production. Their ability to increase capital was insignificant because these households spent more money to cover basic necessities, as was indicated in trends in consumption responses. Survival households appeared to try to raise production volume in order to meet or cover their consumption needs. The fact that they also undertook employment in odd jobs of any kind (*srabutan*) was also noticeable. The rise in the use of their own labor and in efforts to increase the amount or volume of production was the means by which they continued to survive. Attempts to expand market networks in general experienced a drop that was related to limitations on direct mobility to markets. Survival households also displayed a fall in capacity to invest in land or production assets or in household assets.

Conclusions

The rural areas of the Special Region of Yogyakarta have great diversity both in environment and in the culture of the people, and this diversity

has created development dynamics that are also diverse. The management of rural resources has experienced changes that were triggered by both development and the impacts of economic and ecological crises. The following findings are presented as the conclusions drawn from this research:

1. Rural structural changes have occurred with the shift in activities from agricultural to non-agricultural undertakings. These changes have been linked to the fact that the economic value of farming is not to the advantage of farmers who own small holdings. Changes can also be traced to rises in the cost of farm inputs and the farm gate prices of agricultural products, which are often held down by the market and by government policies.
2. At the beginning, the economic crisis was not a very great problem by comparison with the ecological crisis, when a very long dry season and the appearance of crop pests and diseases created difficulties that were felt directly by the rural communities. The long dry season caused crop failures, which were followed by a rapid rise in prices. At first the economic crisis was not felt very much by the rural communities. It was only felt one year later, when the government did away with the fertilizer and pesticide subsidies and when many unemployed people returned to their villages.
3. Community institutions that are based on social relations of reciprocity (mutual assistance) and on more businesslike systems in agricultural and non-agricultural production, can function as safety networks for people in times of crisis. Some of these institutions indeed have helped to lighten the burden, especially for survival households.
4. Changes in livelihood strategies over the five years since the 1997 crisis have not been very great in rural areas. There are variations between villages and between household strategies, the pattern showing a reduction in the number of survival households, a rise in the number of consolidation households and a fall in the number of accumulation households. Upland villages were more sensitive to the economic and ecological crises, in particular the long dry season. This pattern can be seen in Tepus and Glagaharjo villages, where a number of accumulation households fell to the consolidation level.
5. In the context of the life cycle, young households were more dynamic in pushing their businesses forward in order to meet the needs of life. Mature households showed experience and caution in expanding their businesses and taking risks, while households with old and retired persons appeared slow in their responses to changes during the crisis. Many old households experienced a decline in economic dynamics to the point where some were able to survive

but quite a few declined (the real "losers"). Young and mature households with consolidation strategies and with viable types of resource use sometimes showed a tendency to move up and become accumulation households, and more often, or at the very least, were able to maintain their livelihoods during the crisis period (the "winners").

6. In coping with the crisis, the response of many rural households was to alter their consumption patterns by reducing the quantity that they consumed and replacing certain items wirh commodities of lower quality and price, or by economizing. The response pattern of accumulation households revealed efforts to use assets more intensively and to expand diversification in businesses and market networks, while consolidation households reduced their production inputs. Consolidation households showed a tendency to try to economize in consumption by reducing unnecessary expenditure, but they could still afford to meet basic needs and a few supplementary needs. Survival households responded by reducing many aspects of consumption and raising work productivity or increasing the number of working hours.
7. The reduction in the quantity of farm inputs in the form of chemical fertilizers and pesticides and their replacement by organic fertilizer enabled land to be improved in a natural way. The shift from undertakings that depend on agricultural resources to undertakings that combine resources using technological and capital inputs with non-agricultural activities may reduce the pressure upon land. But the introduction of technological inputs at the same time also invites vulnerability stemming from dependence on oil-based fuel and technological supplies whose prices continue to rise constantly. Apart from this aspect, it can also marginalize agricultural laborers and other workers who are not skilled in using the technology.

Annex

Profiles for classifying households in the research sample

Strategy types	*Capabilities*			*Assets*				*Activity types*			
	LF	*EL*	*RI*	*CP*	*AP*	*AE*	*SN*	*OS*	*CT*	*SL*	*JP*
Accumulation	−	+	+	+	+	±	+	+	+	+	+
Consolidation	+	±	±	±	+	+	±	±	±	±	±
Survival	+	−	−	−	±	±	−	−	−	−	−

LF = Labor force commitment of household
EL = Educational level (average of household)
RI = Risk-taking capacity (for investment in production)
CP = Control of production means (land, machines, cattle)
AP = Access to production factors (land, credit/loans including share cropping/labor arrangements)
AE = Access to alternative (non-farm) employment opportunities
SN = Social status/social networks (or social capital)
OS = Operational scale of main enterprise/activity
CT = Capital/technology intensiveness of main activity
SL = Level of required skill of main activity
IP = Income-generating capacity of main activity (profitability)

5 Livelihoods and Coping Responses to the Crisis in Four Villages with Different Farm Systems in the Special Region of the Yogyakarta

Agus Sutanto

Introduction

The economic crisis that started in the middle of 1997 exerted an impact that showed great local variations and socioeconomic differences. Effects that differed and were even contradictory could be found between rural and urban areas, between sectors such as industry and agriculture and between levels of analysis, for example, meso and micro. Economic indicators for the Special Region of Yogyakarta (DIY) were found to be negative in the direct effects caused by the crisis. In the pre-crisis period (1993-1996) the average rate of economic growth in the DIY economy had been 7.8 percent per year. By the end of 1997, however, growth had fallen to 3.5 percent. Attempts to overcome the crisis in the short term were not successful. In fact, according to Statistics Indonesia (BPS), the figure for growth in DIY in 1998 fell drastically to minus 11.8 percent. Signs of improvement began to appear in the following year (1999), when economic growth was 1.0 percent. By 2000 the figure had risen to 4 percent (BPS 2002).

It is interesting that there was no significant jolt in social and household welfare indicators. The findings of an analysis of the National Socioeconomic Survey (SUSENAS) during the crisis years of 1997 and 1998 reveal, for example, that expenditure on food and non-food items was relatively stable. Fears that the school drop-out rate would rise significantly turned out to be unfounded. Similarly, nutrition levels among the community were barely affected by the crisis and even showed a tendency to improve. Five-year data revealed that the total protein energy deficiency (KEP) figure for children under the age of five declined between 1993 and the end of 1997, indicating that the number of children lacking protein intake was steadily decreasing. On the whole, community health was not greatly influenced by the crisis, and stocks of medical supplies were declared to be sufficient until the end of 2000.

In 1997 the labor absorption capacity of the agricultural sector had declined to around only 39 percent, while that of the services sector had actually risen to approximately 41 percent. In 2000, however, the agricultural

sector once again absorbed 43 percent of the DIY labor force. According to BPS (2002: 83), this increase was likely due to the fact that some of the workers who had moved out of agriculture had been forced to return to their place of origin. Those who had been working in the city and had then returned to the village were mainly workers who had been dismissed (PHK). On their return they again took up work in the agricultural sector.

In Bantul District the number of workers recorded as returning to the region because of dismissal due to the crisis was 4,330 up to September 1998 and consisted of 3,052 men and 1,075 women. In Gunungkidul District the total figure for the number of those who had been dismissed was even greater, being 5,201 up to June 1998. In the absence of monitoring and recording, however, there is no source of data for the type of work done by those who returned to their place of origin, which means that the BPS assumption that they returned to employment in agriculture has not been confirmed. The SUSENAS analysis concludes that in the field of labor the number of household members who were employed rose from 39.7 percent to 60.2 percent.

In-depth interviews carried out by the Center for Population Studies at Gadjah Mada University (UGM) in October 1998 do not support the statement that workers who had been dismissed returned to agriculture. Most of these workers felt reluctant to take up farming after being employed in the non-agricultural sector in an urban area. Even the project to create job opportunities in the building of infrastructure through the intensive labor system (*padat karya*) did not receive much response. The reasons were that the work was only temporary, the working hours were too long, and the wages were considered to be inadequate. Those people who had received severance pay used the money as business capital, for example, to undertake retail selling in their homes or to set up a small shop (*warung*) on the side of a road.

In the agricultural sector the economic crisis had already caused farm inputs to become increasingly expensive and in fact it was hard to obtain seed of any kind except rice seed. Chemical inputs, both herbicides and pesticides, became more expensive by the day (Gérard & Ruf 2001). Even so, farmers did not really feel the rise in the cost of these inputs because of the government system of stocks and subsidies. In Gunungkidul, for example, in October 1998, when the planting season began, supplies of fertilizer were relatively sufficient. There were 12,000 tons of urea fertilizer, 1,500 tons of SP, and 1,000 tons of KCI in storage sheds. There were a few weaknesses in the distribution system, which caused market prices to rise by around 25 percent. The production of agricultural commodities was not disrupted by the crisis and the Agricultural Service in Gunungkidul noted that, in comparison with the 1996-1997 period, the production of rice, soybeans, and corn actually rose during the crisis.

It would appear that landowning farmers were not seriously hit by the crisis. In fact, they often gained advantages from the rise in prices for their agricultural products. In particular, those who grew perennials (such as cashew nuts, coffee, and cocoa) obtained a rather large profit. Hence they did not really feel the increase in commodity prices that was a consquence of the crisis. In fact, according to Gerard and Ruf (2001), a number of agricultural commodities (including fish) that were intended for export brought a good profit, thanks to the crisis which had led to depreciation in the value of the rupiah. Those who appeared to be most affected were agricultural laborers and tenant-cultivators (Anonim1998:2). The wages that they received did not rise in proportion to the cost of inputs. Besides that, the commodities that they planted were intended for subsistence purposes and so they did not enjoy the increase in agricultural commodity prices.

At the micro level, it was generally said that the reason that the impact of the crisis was not felt very greatly by rural people was the flexibility and resistence of rural areas in coping with it. The main characteristic that supported the superior response of rural areas was their self-reliance or low degree of dependence on external factors and their ability to meet their own needs (Tukiran dan Sutanto 1999).

It has been assumed that the impact of the crisis varied with locality because of the prevailing diversity in socioeconomic and agro-physiographic conditions. For that reason wider research of a comparative nature is needed. The objective of the present study is to examine variations in livelihoods and responses to the crisis in areas with different production patterns and different agricultural resources.

Research method

The present study took in four districts in the Special Region of Yogyakarta, namely, Sleman, Bantul, Kulonprogo, and Gunungkidul. Each district is represented by one sample research area at village level. Research areas were selected in such a way that they would be representative of different agro-physiographic conditions and different modes of agricultural production. It was assumed that these differences would produce different livelihood situations and different responses to the crisis. The characteristics of the research areas are shown in table 5.1.

Respondents were the heads of farm families. A stratified sample was taken based on the two main variables, namely, intensity in the use of inputs and household income. In the use of inputs a distinction was made between two categories, those above and those below the average. Household income was divided into three classes. Low income was income below the average (x) – 1/2 sd (standard deviations). Medium in-

Table 5.1 *Agro-physiographic characteristics of the research areas*

Number	*Name of area*	*Physiography*	*Mode of agricultural production*
1.	Wonokerto village, Turi subdistrict, Sleman district	Volcanic slope, fertile soil with irrigation throughout the year in northern part of DIY	Commercial agriculture, intensive organic inputs, low labor input Dominance of mono-horticulture: snake fruit (salak) plus small areas of rice and chili
2.	Giriasih village, Panggang subdistrict, Gunungkidul district	Gunung Sewu karst, southern limestone hills, dry and rain-fed	Mixed farming with upland subsistence food crops and commercial perennials (agro-forestry)
3.	Sidoharjo village, Samigaluh subdistrict, Kulonprogo district	Menoreh Hills, fairly fertile uplands, rain-fed in western part of DIY	Mixed farming with upland food crops and commercial perennials (cloves, coffee, vanilla, rice, and chili)
4.	Tirtohargo village, Kretek subdistrict, Bantul district	Alluvio-volcanic foot plain and fertile coastal area with irrigation throughout the year in southern part of DIY	Commercial agricultural commodities with intensive inputs Lowland rice and horticulture (chili and onions)

come was income ranging between ($< x - 1/2$ sd) and ($x + 1/2$ sd), and high income was income whose value was ($> x + 1/2$ sd).

Input intensity was used in sample stratification on a basis of the following considerations:

– The use of inputs depicts intensity of production and level of agricultural commercialization. The higher the value of the inputs, the more intensive and the more commercial farming was considered to be.
– During the crisis period, agricultural inputs constituted a variable whose availability and price were assumed to be the least stable. The same applied to the prices of commercial commodities in the market.

The use of these two variables produced a six-cell matrix (2×3) that indicated the type of respondents. In each cell (type) there were two respondents, which meant that each research village was represented by 12 sample respondents. The total sample consisted of 48 people, who were interviewed in depth in 2003. The focus of the research was on the three main elements related to the crisis, namely, the livelihood situation, livelihood strategies, and coping responses.

The livelihood approach

In facing changes in their livelihood situation, households developed certain strategies that might differ from those adopted by other households. Some households felt that these changes tended to make their situation worse, to the point where the strategy adopted was to try to survive, that is, a survival strategy. Other households that might perhaps have obtained opportunities and advantages because of the changes developed accumulation strategies.

Besides changes at the household level, changes in the livelihood situation were also experienced by the enterprises or economic activity units conducted by the household. A number of enterprises profited and obtained opportunities because of the changes. These businesses were able to develop a strategy of expansion in undertakings (expansionist). On the other hand, a number of businesses with different characteristics perhaps came out losing as a consequence of the changes. They developed strategies of survival and reduction in the scale of their undertakings (survival-contractionist).

The differences in these strategies can be explained through the livelihood approach. The livelihood concept has not yet obtained a scientific transliteration that is widely recognized in studies of poverty and welfare in Indonesia. This is understandable in view of the fact that this field of studies developed only in the 1990s. In dictionaries, livelihood is frequently equated with means of living, which is interpreted as the source of earnings or of life. The livelihood concept, however, covers more than that. Livelihood is understood as a potential totality, possessed by the household, which covers at least the elements of assets, capacity, and activities that form the means of life. In general, livelihood is defined as assets, capabilities, and activities required for constructing the means of living (Ellis 2000; White et al. 2002).

In this study livelihood at the household level covers the assets that it owns, its capabilities, and its degree of needs satisfaction.

The element of assets covers ownership relations and access to resources, which in this study are indicated by the following variables:
– ownership of land, machines, and implements
– access arrangements: renting and sharecropping, etc.
– social status and skills

The element of capabilities is represented by the pattern of resource use, which consists of a number of indicative variables, including:
– level of income and income security
– expenditure on consumptive items
– savings

– labor participation
– the use of capital and technology

The element of needs satisfaction is defined by three main variables:
– coverage of basic needs or subsistence level
– room for wealth accumulation
– social safety networks

With the assistance of these determinant variables, the data obtained from in-depth interviews with respondents could be compiled to reveal the livelihood situation of households. Households were then classified into three types of livelihood situation: better-off households, reasonable households, and shortage households.

Variations in the livelihood situation of farm households in four agricultural systems

The discussion in this chapter is intended to determine the livelihood patterns and changes in those patterns in four villages with different agro-physical conditions and systems of agriculture.

Livelihood situations in farm households in Tirtohargo village

Tirtohargo village is situated on a stretch of fertile, alluvial, coastal plain. Agriculture is possible throughout the year with the support of a good irrigation system. The village is located around twelve kilometers to the south of the city of Yogyakarta. Farming in Tirtohargo is commercial in nature and there is high intensity in the use of manufactured inputs. The main crops that are cultivated are onions, chilli, and rice. Using the livelihood approach, three situations can be distinguished among farmers: the better-off, the reasonable, and the shortage situations, as shown in table 5.2.

Farmers classed as better-off have relatively large holdings of irrigated rice land (*sawah*), which are on average more than 0.6 hectares in area. Control over land tends to make holdings larger. The additional land can come from purchases or the renting-in of arable land owned by the village. Assets in the form of production equipment consist at the very least of one water-pumping unit and a sprayer. Since the quantity of rice produced in one planting season far exceeds the consumption needs of the family, the greater part of output is sold. The participation of family labor in the agricultural production process is limited, for these households tend to rely on paid labor.

Table 5.2 *Livelihood situations in Tirtohargo*

Livelihood elements & variables	*Livelihood situation*		
	Better off	*Reasonable*	*Shortage*
I. Assets			
Land	>0.6 ha - expanding	0.14-0.28 ha stable	<0.2 ha, landless
Machinery, tools, implements	water pump, sprayer	sprayer	none to borrow/rent
Social status skills	moderate to high	moderate	low to moderate
Access arrangements	own land, renting out	own land, sale, renting	renting
II. Capabilities			
Level of income	high	moderate	low
Expenditure-consumptives	moderate to high	moderate to high	low to moderate
Saving	high, in cattle, machine	moderate, in cattle	low, in cattle
Employment status	owner-manager	owner-operator	tenant laborer
Labor participation	high, paid labor dominant	moderate, combination family-paid labor	low-moderate , family labor dominant
III. Needs satisfaction			
Wealth	high, contrast	reasonable	low
Basic needs coverage	exceeding	sufficient	insufficient
Social network	not relevant for subsistence	for investment	for food, education

Source: Primary data 2003

At the very least, wealthy households in the "onion" village of Tirtohargo own one motorcycle and one color television. On the whole, they have valuable goods that are not generally owned by village people, such as refrigerators, gas stoves, and VCD players. Ownership of consumptive goods in these households also tends to increase both in type and in quantity. The houses of this group are different in physical appearance from those around them, as they have been renovated with more modern designs or else are two-storeyed. Apart from expenditure on consumptive goods and house improvements, agricultural income is also used for investment in things like livestock and agricultural production equipment. Social networks of a subsistence nature like rice, health, and educational programs provided for poor people are not relevant for these households.

Farm households classed as "reasonable" in Tirtohargo own production assets that enable them to meet their needs. Their land assets (*sawah*) range between 100 ru and 200 ru (1,400 to 2,800 square meters). They own adequate agricultural equipment and generally have a sprayer

but not necessarily a water pump. The participation of household members in agricultural activities is fairly high, but they also employ paid labor. Laborers are used primarily for activities that would be hard for the family to handle alone, especially soil preparation and harvesting.

The rice produced by households of this type in Tirtohargo is enough for staple food sufficiency over a period of one year. The profits from the commercial cultivation of onions and chilli cover the household's non-food economic needs. Additional work undertaken by the household involves independent economic activities, in particular trade (in chickens, farm produce, or assorted retail goods). The social networks used by these households are mainly those connected with production investment like the farm credit program (KUT).

Households in the "reasonable" category have a minimum of one cow and own a color television. Their houses are permanent in structure and floors have been hardened or plastered with cement. These households do not have any financial difficulties. They can put aside a part of their income as savings, in the form of either goods or livestock, with which to rent agricultural land, purchase goods that represent secondary needs, or renovate their houses.

"Shortage" households do not have any land assets or else they control a small area of land which they cultivate with simple, limited production equipment. The limitations of their production assets make it difficult for them to improve their socioeconomic position. On average, the land that they control is less than 2,000 square meters in area. In status, most of the land that is not their property is rented from the village treasury or is office land allocated to village officials.

Households in this group do not have any expensive agricultural equipment like sprayers and water pumps. They borrow or rent such equipment from other farmers, neighbors or relatives. They endeavor to reduce expenditure on paid labor. Family labor has a major role in all stages of farming, from soil preparation, planting, application of fertilizer and pest and weed eradication, to harvesting. Expenditure on paid agricultural labor for the preparation of land for rice cultivation is unavoidable and it requires the rental of a hand tractor, including a person to operate it. All production is consumed by the household itself. Because the size of holdings is small, the output of rice is frequently insufficient for family requirements over a year. The household often has to buy additional rice with the money earned from the cultivation of onions or chilli. These households feel that they have been helped by the introduction of the social safety network in the form of distribution of cheap rice to poor families.

The members of shortage households in the onion village of Tirtohargo earn additional income mainly by laboring, for example, as agricultural laborers and construction workers. Ownership of valuable goods is

extremely limited (to a radio). Household furniture is simple; instead of a set of table and chairs, they have only a long table and sofa. Household ownership of these goods remained virtually unchanged between the two research periods. This is understandable because the scale of priorities in meeting needs placed more emphasis on productive aspects so as to increase income than on the purchase of consumptive goods. Hence, if there is a little surplus income, households tend to save it in the form of investment goods, particularly livestock. A further consequence of the low income of these households is that efforts and opportunities to improve their houses are also limited. The houses of families in this category still have earth floors and unplastered walls and often do not have their own bathroom and WC.

The shortage group has fragile resistance. Any additional burden of responsibility will worsen their economic situation. For that reason two main trends can be distinguished within the group: a trend towards improvement and a trend towards decline when faced with the burden of responsibilities in life. Households that tend to improve are those in which which the burden becomes steadily smaller, usually because children have finished their education or are even working and hence do not need parents' assistance. Although they are working, the children of these households cannot yet help their parents in the short term because their income (for example, from employment as shop assistants) is inadequate. The households whose situation tends to decline are those in which the burden of family responsibilities increases. Young families whose children are just entering junior high school (SMP) face higher educational costs. For that reason this group of households found the social network in the form of educational subsidies very helpful during the crisis period.

Livelihood situations in farm households in Giriasih village

Giriasih village is located on a stretch of land in limestone hills that are infertile and have limited water supplies. The village is situated approximately 16 kilometers to the southeast of Yogyakarta. Agriculture in this village consists of a mixture of food crops, secondary crops, and perennials. The main orientation in the cultivation of food and secondary crops is towards the household's own consumption. Cash is obtained from the sale of firewood (especially acacia) and building timber (in particular teak and *sonokeling*).

As shown in table 5.3, the better-off households have large land assets that average more than 1 hectare and include a minimum of 2,500 square meters of rice land (*sawah*). These households have increased their land assets by purchasing land from other farmers. In Giriasih, most of the farmers who have sold land are those who moved to places outside the re-

Table 5.3 *Livelihood situations in Giriasih*

Elements & variables	*Livelihood situation*		
	Better off	*Reasonable*	*Shortage*
I. Assets			
Land	>1 ha, expanding	moderate, expanding	small
Machinery, tools, implements	sprayer, thresher	thresher	traditional
Social status skills	high, teacher, formal	moderate, social activist	common
Access arrangements	provider share-breeding	owner share-breeding	share-breeder
II. Capabilities			
Level of income	moderate to high	moderate	low
Expenditure-consumptives	moderate	moderate	low
Savings	in cattle, land, teakwood	possible in cattle	through share-breeding
Employment status	combination formal type	self employing-family	laborer
Labor participation	paid - dominant	family - prime	family
III. Needs Satisfaction			
Wealth	high to normal	normal	poor
Basic needs coverage	better quality-normal	normal	low quality-less
Social network	remittances to children	for education, investment	for food, education

Source: Primary data 2003

gion or even outside the island. The farm equipment that wealthy households own is more complete. In addition to a plow and harrow, they have a sprayer and a thresher. They own at least two cows. Some of their livestock are entrusted to other farmers for share-breeding.

In the agricultural production process these households use paid labor for the care (weeding) and watering of crops. Of total rice output, a minimum of 600 kilograms is used for their own needs; the remainder represents a surplus. Accumulation households have sufficient capital to be able to afford to cultivate tobacco, which requires a rather large input of capital for paid labor and crop maintenance as well as for the purchase of water. In addition to cattle, these households have savings in the form of high-value stands of teak trees.

Unlike better-off households in the other research areas, ownership of consumptive goods and stylish houses is not striking. In general, better-off households have a color television, but many households in the reasonable category also have color televisions. Similarly, their houses do not stand out or differ from those of other households. Differences

lie in the greater size of their houses and in the larger storage tanks that they own to catch rain water. Their food consumption patterns reveal better quality food items, including eggs and sometimes meat or chicken, especially on market days. Meat or chicken are purchased when the wife takes farm products to market.

During the crisis period these households sent remittances to children living in urban areas. Besides money to buy materials worth millions of rupiah, remittances also took the form of building materials or finished furniture.

The "reasonable" (*cukupan*) category, which is the middle group in the socioeconomic strata in the research villages, is found in greatest numbers in Giriasih. The land assets of these households consist of both dry fields and rice land and can produce enough to meet the household's staple food needs for one year as well as its financial needs for daily expenses. If the season is good and harvests are successful, there is still some rice left over from the rice that they have stored. This rice can be sold to buy fertilizer in the following planting season. On the whole, these households can set aside a part of their income as savings. When savings are sufficient, they can be used to raise the household's socioeconomic position, to improve the house, to increase livestock, or to purchase consumptive goods like a radio or a TV.

Family labor is the main type of labor used in land cultivation by these households but they also employ paid labor at least for land processing and harvesting. Family labor is concentrated on crop care, involving tasks like weeding and the application of fertilizer. Households in the "reasonable" category have the opportunity to experience gradual improvements in their socioeconomic status. They own at least one cow and also undertake the share-breeding of cattle owned by wealthy farmers.

Some of the reasonable households in Giriasih can afford to renovate or make brick walls for their houses. In general, these households own a TV or are saving up to buy one. On average they already own a radio and cassette player as well as standard home furniture like a set of chairs with a table, a large cupboard, and a buffet cupboard. Their consumption patterns are a little better than those of "shortage" households in the sense that family members no longer consume cassava and but eat rice three times a day with additional food of fairly good quality (soybean curd and soybean cake, as well as eggs). Reasonable households in Giriasih make use of social networks primarily to cover educational costs. A small number use these networks for animal husbandry. The sources that they use include farmers' loans and savings groups, the farm credit program (KUT), revolving credit associations (*arisan*), and remittances.

"Shortage" households in Giriasih can be recognized from the fact that they cannot afford to purchase drinking water in the dry season.

The cost of one truckload of water for domestic use, which lasts around ten days, is Rp 25,000. Members of these households are forced to walk some distance, descend into caves (*luweng*) to collect water from underground streams, and then carry it back home. Most have one or more members employed as agricultural laborers. Women from these households, when working as laborers, even undertake hoeing for field preparation and gather grass as livestock fodder.

The *sawah* assets owned by these households are so small that rice output is insufficient for household consumption. They depend on family labor for cultivation of their land. The agricultural equipment that they own is generally of the traditional type and consists of a plow and harrow. They still combine rice and cassava in their pattern of food consumption. For that reason the social security network (JPS) in the form of rice for poor families has helped them with their subsistence needs. In addition, they receive remittances from household members working elsewhere outside the area.

These households have no livestock of their own but share-breed animals owned by wealthier farmers. The poor quality of their houses is apparent in the earth floors and the absence of a WC. They do not own any valuable goods or furniture except for a hammock, a cupboard, and a sofa.

Livelihood situations in farm households in Sidoharjo village

Sidoharjo is one of the villages in Samigaluh Subdistrict in the District of Kulonprogo. It is located in the Menoreh Hills, some 21 kilometers to the west of Yogyakarta. Unlike Giriasih, which is situated in an upland area in infertile limestone hills with limited water resources, Sidoharjo has relatively fertile upland agricultural land as well as sufficient water for both agricultural and domestic needs.

As table 5.4 shows, the better-off households in Sidoharjo have much in common with the better-off households in the other research areas. They own large land assets, with holdings averaging 1 hectare or more. These holdings have become larger through purchases. In managing their land, they depend on paid labor. The participation of household members is relatively limited. Sources of household livelihoods involve combinations with the non-agricultural sector and in particular with the formal services sector (teachers, village officials, or office-holders), which also gives these households high social status in the community. With these patterns of job combinations, households are not physically involved in agriculture. On the whole, they already own rather expensive agricultural equipment, such as sprayers and threshers. In addition to using the equipment themselves, they also lend or rent it to other farmers.

The better-off households in Sidoharjo can choose commodities of greater commercial value. In addition to commercial crops like cloves, cacao, coffee, and vanilla, they cultivate horticultural crops like chilli and snake fruit (*salak*) and also manage cattle commercially. The types of cattle that they choose are those of high sale value. They plant elephant grass for green fodder and mix it with concentrate to improve the growth of livestock.

In the pattern of enterprises, which is commercial in its characteristics, the economic situation of better-off households differs greatly from that of surrounding households in such things as the ownership of motorcycles, color TVs, and houses, which are bigger and finer and are equipped with better furniture. The social safety networks for subsistence purposes are not relevant to these households. They make use of social networks from formal sources like employees' cooperatives or village banks to improve their businesses.

The households most commonly found among the people of Sidoharjo are those in the "reasonable" category. They have sufficient production assets to ensure that their household needs are met. The holdings owned by this group range from 0.25 to 0.5 hectares. Land use is not concentrated merely on fulfillment of basic food supplies, because food needs over a one-year period are supplied from one planting season. Hence in the second planting season they can cultivate secondary crops like peanuts, soybeans, and corn for sale.

The main source of labor is the household. Paid labor is used for soil preparation, planting, and harvesting. Family labor is used for pest eradication, the application of fertilizer, and weeding. These households own traditional farm equipment in the form of plows and harrows. Sprayers can be borrowed. In this group there are households that have experienced an increase in their business undertakings and so they can save and increase their investment or production assets. Additional investment is mainly in livestock (goats or cattle) or in additional productive land, which involves, for example, the rental (or sharecropping) of village land or land allocated to village office-holders.

Many of these households have additional employment apart from farming. Unlike the better-off households, whose non-farm work is generally in the field of formal services, these households have extra non-formal jobs that involve self-enterprise, like trade, repair shops, artisans' work, or cottage industries (for example, the making of *geblek* cakes and *koro* bean-curd cake). With these characteristics, "reasonable" households have a relatively good socioeconomic situation that is evident in the structure of houses, which are usually brick or half-brick and ownership of TV sets and adequate household equipment (a set of chairs, large cupboard, and buffet cupboard). They have social networks involving remittances from overseas workers (TKI), which are used to fi-

Table 5.4 *Livelihood situations in Sidoharjo*

Elements & variables	*Livelihood situation*		
	Better off	*Reasonable*	*Shortage*
I. Assets			
Land	±1 ha, expanding	0.25 ha-0.5 ha expanding	landless, sharecropper
Machinery, tools, implements	sprayer, thresher/ rent out	traditional tools owned	none or limited simple tools
Social status skills	high, teacher/civil servant	intermediate farmer	low, landless farmer
Access arrangements	owner/renter, manager	owner-operator	laborer, share-cropper/breeder
II. Capabilities			
Level of income	high, secure	moderate, stable	low, insecure, fluctuate
Expenditure-consumptive	high (education, housing)	moderate (investment)	low (in basic needs)
Saving	possible, in education/land	in cattle-share-breeding	none
Employment status	high, incl. formal sectors	self-employed	laborer
Labor participation	paid labor-dominant/prime	family-dominant	family wage work
III. Needs satisfaction			
Wealth	rich-normal	normal/fair	poor
Basic needs coverage	exceed better quality	sufficient	difficult, low quality
Social network	not relevant for subsistence	for education-investment	for food/subsistence

Source: Primary data 2003

nance education, and agricultural inputs through the farm credit program (KUT).

"Shortage" households in Sidoharjo are characterized by their lack of land assets. They depend on land that they sharecrop or rent, or on the assistance of parents. Rented *sawah* enables them to meet the household's subsistence food requirements over a period of one year. For that reason, the commodities produced on the rented land are more likely to be food crops, that is, rice, corn, and cassava. The sharecropping system generally found in Sidoharjo is of the one-fifth type, that is, three-fifths of the output is used as production capital and the remaining two-fifths is divided between the landowner and the cultivator. The level of dependence on agricultural land for basic needs is rather high, which means that, if crop failure occurs, food self-sufficiency is disturbed. That is why people said that the social network in the form of cheap rice for the poor has been beneficial.

These households have only their labor. They do not own even agricultural equipment like plows or harrows, which they borrow or rent. Virtually the whole process of land cultivation is carried out by household members. The paid labor of women is used only at rice-planting and harvesting times. Because of their limited income from the sharecropping of land, members of survival households combine farming with employment as laborers of various kinds, such as agricultural laborers or laborers who transport timber (glidig-glondong). In the dry season there is much felling of trees and so there is great demand for laborers to carry wood. During the wet season they are busy in agriculture, where many farmers need their labor. In addition to laboring, these households also try to supplement their income by share-breeding livestock owned by neighbors or wealthier farmers.

The absence of ownership of production assets and the lack of productive employment causes the socioeconomic situation of these households to be low. This is apparent in the physical state of their houses, which have bamboo walls and earth floors. Ownership of valuable goods is very much at a minimum and consists merely of a radio and limited household furniture such as a sofa for guests, a hammock, and a simple cupboard.

Livelihood situations in farm households in Wonokerto village

Wonokerto is one of the villages in Turi Subdistrict in the District of Sleman. The land of this village is part of a fertile volcanic foot plain and is relatively well watered. The village is situated about 16 kilometers to the north of Yogyakarta. It has good access to communication nodes, means of transportation, and regional markets.

The households in the "better-off" category in this village (table 5.5) can be recognized by the size of their agricultural holdings, which are more than 0.5 hectares in area. They have obtained these larger holdings by purchasing land. Snake fruit is their main commodity. The process of conversion of *sawah* to snake fruit gardens has taken place very rapidly. Only a few landowners still use their land for rice growing. On the whole, they are waiting for sufficient capital to convert their land. The participation of labor from better-off households in agricultural activities is relatively limited and involves mainly supervision of the work of agricultural laborers.

In agricultural equipment they do not differ from other farmers because the cultivation of snake fruit requires only simple implements. Furthermore, the laborers who are employed usually bring their own tools. They differ, however, from other households in the intensity of use of inputs because of the size of their holdings. The average amount

of compost that they use is more than 10 truckloads whose value is approximately Rp 2 million or more per year.

As is the case in the other research villages, there is a tendency for better-off households to have a combination of occupations, with non-farm employment in the formal services sector as teachers, public servants, or employees in private businesses. Besides the fact that their economic situation is good, these households also have good social status within the community. Their better economic situation can be seen in their ownership of possessions that are not common among the community such as cars, refrigerators, gas stoves, and VCDs, as well as houses that are large and modern in their architecture. Hence the subsistence-oriented social security network is not relevant to these households. They even assist with business capital and send remittances to their children.

"Reasonable" households own snake fruit gardens of less than 0.5 hectares but the income that they receive is more than sufficient to cover household needs and so none of them belong to the "shortage" category. These households also depend on the employment of paid labor, especially for the application of fertilizer at least twice a year. They differ from the better-off households in the fact that family labor still plays a role in cultivation, particularly in the daily pollination and harvesting of fruit.

The adequacy of the earnings of these households from snake fruit cultivation is apparent in their ownership of at least one motorcycle per household as well as a colore television. A few of these households cook on gas stoves but generally they use kerosene stoves, with only a very small number still relying on firewood. Their houses generally have permanent brick walls, but a small number are not yet plastered. Other households are currently renovating their houses to make them more modern in style

Unlike better-off households, those in the "reasonable" category tend to combine agriculture as a source of income with non-agricultural work but not in the formal services sector. Most of their non-farm work is supplementary and consists of non-formal services like trade, driving, or brokerage.

In general, they still depend on agriculture for household income, of which at least 60 percent comes from the cultivation of snake fruit. Social networks are quite important in financing production. They can be formal in nature like the village bank or personal like fruit traders.

Changes in livelihood situations

As a coherent system, livelihood elements contain dynamic concepts and leave the way open for changes. Between the two research periods

Table 5.5 *Livelihood situations in Wonokerto*

Elements & variables	*Livelihood situation*	
	Better off	*Reasonable*
I. Assets		
Land	>0.5 ha	<0.5 ha
Machinery, tools/ implements	as required	normal
Social status skill	high (incl skilled-jobs)	common (farmer)
Access arrangements	easy, no sharecropping	owner, no sharecroppers
II. Capabilities		
Level of income	high	moderate
Expenditure-consumptive	high in transport (car)	moderate (motorcycle)
Savings	high-various types	possible-moderate level
Employment status	combination, formal jobs	combination, self-employed
Labor participation	wage labor dominant	family labor + wage labor
III. Needs Satisfaction		
Wealth	highly identifiable	significant
Basic needs coverage	exceed considerably	exceed, moderate level
Social network	not relevant for subsistence	moderately relevant (investment)

Source: Primary data 2003

(1998-2003) in the four villages, village household livelihood situations generally remained stable. Changes occurred only on a limited scale and barely touched on the different livelihood elements. The changes occurring in the five-year period that are presented in table 5.6, can be divided into two types, namely:

1. The type involving shifts in category, that is, households which changed after experiencing a significant improvement that placed them in a higher category or after undergoing deterioration that shifted them down to a lower category.
2. The improvement/deterioration type, that is, households that, despite experiencing an improvement or deterioration in their livelihood situation, did not change their livelihood category because of that improvement or deterioration

As table 5.6 shows, there is at least one instance of a change in livelihood category in each village. In Giriasih there was an improvement in the number shifting from a shortage to a reasonable situation. In the commercial horticulture area of Tirtohargo there was a greater change, with an increase in better-off households and a reduction in shortage households. In Sidoharjo there was a drop in the number of better-off households. This is traceable to increasing age, which caused household

Table 5.6 *Changes in livelihood situation 1998-2003 in four villages in the special region Yogyakarta*

Village	*Livelihood 1998*	*Livelihood 2003*							
		Better off		*Reasonable*		*Shortage*		*Total*	
		N	%	*N*	%	*N*	%	*N*	%
Giriasih	Better off	3	25.00	-	-	-	-	3	25.00
	Reasonable	-	-	7	58.33	-	-	7	58.33
	Shortage	-	-	1	8.33	1	8.33	2	16.67
	Total	3	25.00	8	66.67	1	8.33	12	100.00
Tirtohargo	Better off	3	25.00	-	-	-	-	3	25.00
	Reasonable	1	8.33	4	33.33	-	-	5	41.67
	Shortage	-	-	1	8.33	3	25.00	4	33.33
	Total	4	33.33	5	41.67	3	25.00	12	100.00
Sidoharjo	Better off	3	25.00	1	8.33	-	-	4	33.33
	Reasonable	-	-	7	58.33	-	-	7	58.33
	Shortage	-	-	-	-	1	8.33	1	8.33
	Total	3	25.00	8	66.67	1	8.33	12	100.00
Wonokerto	Better off	3	25.00	1	8.33	-	-	4	33.33
	Reasonable	1	8.33	7	58.33	-	-	8	66.67
	Shortage	-	-	-	-	-	-	-	-
	Total	4	33.33	8	66.67	-	-	12	100.00

members to reduce farm activities and withdraw from participation in agriculture. In the *salak*-producing village of Wonokerto there were reasonable households that shifted to the better-off category, yet this shift was accompanied by the fall of several better-off households to the reasonable category. Thus the overall composition remained the same. In Wonokerto the change occurred because of the presence of an increase in land assets that were bought from non-farm income savings (cross-investment). Additional land assets for the cultivation of snake fruit led to an increase in income and a significant change in the livelihood elements that were observed, to the point where the households in question moved up to the category of well-off families. On the other hand, the fall in another household was caused by the loss of a non-farm asset in the form of a vehicle that was sold because the household could not afford to cover maintenance costs.

Variations in cases were found in the improvement type. Improvement because of external factors was revealed, for example, in the case of a respondent in Giriasih who obtained severance pay from urban employment. This money was then invested in the purchase of livestock and was also used as business capital for trade in timber. Although the

household is still in the reasonable category, this injection of external capital brought about an improvement in the elements of its livelihood. Improvements because of internal factors are revealed in the onion-producing village of Tirtohargo as a result of a reduction in the burden of responsibilities (consumptive expenditures). This was possible because children had completed their education or were already working. Although the household was still in the survival category, this respondent was able to increase his investment in livestock. Apart from the fact that its burden had decreased, the change in this household was also made possible by the flow of remittances to the family. In Sidoharjo improvements occurred in the form of additional land assets and diversification in employment in the form of establishment of a kiosk in the market. The main source of the improvement was the combination of profts from agriculture and remittances. Besides these cases, better-off households in each village on the whole experienced improvements in their livelihood situation. Their incomes exceeded their needs and so they were able to save and invest. This was apparent in their increased assets of production land and investments in livestock and production equipment. This increase took place through either reinvestment of business profits or reinvestment of non-agricultural income.

The livelihood strategies of farm households

Farm households differ in their production orientation. Even for the same livelihood situation, production orientation can be different. One household might perhaps feel satisfied with the situation it has already achieved, while another might still wish to broaden and advance its enterprises. To learn how farm households differ in seeking and utilizing these opportunities for change, the farm household livelihood strategies approach is used. Strategy, according to the dictionary, is a concept that was originally used in military circles (Ahmadi 1990). The word is often taken to mean the same as tactic or method to reach a certain goal or a procedure that contains within it choices to achieve a certain objective after costs or sacrifices have been calculated. This concept was then frequently used and expanded in various fields while still keeping to the basic principle. By identifying livelihood key variables, the strategies of farm households can be differentiated into three categories, namely, accumulation, consolidation, and survival strategies.

Accumulation households are those that are oriented to an increase in income and profit through a widening of and increase in production assets and commercialization and efficiency in their business activities. For that reason this type of household tends to be progressive in nature, to be a risk-taker and to be expansionist. Consolidation households tend

to feel relatively satisfied, to protect the stability of their production and socioeconomic assets and to give priority to security and sufficiency in meeting household needs. They tend to be conservative and to avoid risk. Survival households are characterized by maximization in the use of their economic resources so as to meet basic household needs in the face of the limitations of their economic assets. These limitations and the demands of daily needs make these households avoid risks and innovations. Maximization in the use of resources, especially of labor, cannot raise survival families to a better standard of living. Table 5.7 presents the categories and characteristics of farm households based on their livelihood strategies.

From this table it can be seen that there are significant differences in livelihood variables between household strategy groups in the four research villages. The households with a survival strategy have minus (-)

Table 5.7 *Livelihood variables and incidence rates by type of strategy*

Category	*UL*	*UCT*	*ULER*	*MO*	*CAPA*	*OLM*	*AA*	*SS*	*ASST*	*BN*	*WA*	*NEED*
I. Giriasih												
Accumulation	1.00	1.00	1.00	0.67	1.00	0.67	1.00	0.67	0.67	1.00	1.00	1.00
Consolidation	0.25	0.13	0.37	0.37	0.07	0.25	0.13	0.25	0.13	0.37	0.25	0.37
Survival	0.00	-1.0	-1.0	0.00	-0.5	0.00	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
II. Sidoharjo												
Accumulation	1.00	1.00	1.00	1.00	1.00	0.60	1.00	0.60	1.00	1.00	0.60	0.80
Consolidation	0.50	0.17	0.00	0.00	0.50	0.00	0.17	0.50	0.33	0.50	-0.17	0.08
Survival	-1.00	-1.0	0.00	-1.0	-1.0	-1.0	0.00	-1.0	-1.0	-1.0	-1.0	-1.0
III. Tirtohargo												
Accumulation	1.00	1.00	0.50	1.00	1.00	1.00	0.75	0.25	1.00	1.00	1.00	1.00
Consolidation	0.50	0.75	0.00	0.75	0.50	0.25	0.25	0.25	0.25	0.25	0	0.13
Survival	-0.25	-0.75	-0.25	0.0	-0.25	-0.75	0.00	0.00	0.00	0.00	-0.75	-0.375
IV. Wonokerto												
Accumulation	1.00	0.75	1.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	0.50	0.75
Consolidation	0.375	-0.125	-0.125	0.50	0.25	0.125	0.25	0.00	0.125	0.375	0.125	0.25

Note:
CAPA (capabilities: patterns of resource use):
UL = use of labor
UCT = use of capital/technology
ULER = use of local/external resources
MO = market orientation
ASST (assets: ownership, relations, access to resources):
OLM = ownership of land/machinery
AA = access arrangements (renting, sharecropping, etc.)
SS = social status/skills
NEED (need satisfaction):
BN = coverage of basic needs/ subsistence level
WA = room for wealth accumulation

values for a number of variables. This points to a decrease or reduction in those variables so that the household can maintain fulfillment of basic needs. This is more obvious in the two upland villages, Giriasih and Sidoharjo, as it means that opportunities for survival households are more limited in these two areas than in the lowland villages. In the case of production assets and access to production activities in these two villages, a decline has occurred. The reason is that the cost of renting land has risen while the capacity of the household to pay that rent has remained relatively fixed. Survival households endeavor to maximize the use of family labor and to reduce expenditure on wages for paid labor. The fall in their business assets has an impact on production, which is more focused on satisfying subsistence requirements. The table shows that survival households tend to experience a drop in capacity to meet household needs.

Unlike the survival strategy, which tends to involve deprivation, accumulation households experience a strengthening in assets, activities, and prosperity. These three elements form a dialectic combination. A rise in production land assets needs more workers and an input of capital and technology that is also rising. The result is greater output that is market-oriented in nature. Increases in products and sales lead to an increase in income, which opens up scope for the accumulation of wealth.

Livelihoods and the life cycle

The type of household strategy and response to the crisis cannot always be explained by the livelihood situation alone. Many differences can be explained only in terms of specific stages in the life cycle of rural households. It is assumed that stages in the life cycle have their own impact on the vulnerability or resilience of the household. One life-cycle stage differs from other stages in level of consumptive needs and expenditure. For example, in a young family, that is, a family with children who are still in primary school, the cost of education and care of children is not as great as in a more mature family whose children have already completed their primary education. Even so, children do not always imply costs. In mature and old families, children can even become family workers and thus a production factor.

In the data presented in this study the life-cycle concept has been adapted from Chayanov's life-cycle classification (cf. Titus 2003). The life cycle is divided into four categories. Young couples are those whose children are of primary school age. Mature couples are husbands and wives whose children are at a higher educational level than primary school. Old couples are husbands and wives whose children no longer

attend school. Cross-generational couples are families that consist of grandchildren, father-mother, and grandparents, or only grandparents and grandchildren.

As table 5.8 shows, the categories of cross-generational couples and mature couples are dominant and include mainly consolidation households. In general, cross-generational couples and families represent an interesting life-cycle stage in the study of the crisis because they are not found in Chayanov's classification. The stages in this cycle illustrate specific sociocultural responses. In Giriasih and Sidoharjo, numbers of school-aged children were found who had been left with their grandparents while their parents remained in the city or even went overseas.

Table 5.8 *Livelihood strategies and life cycles in four villages in the special region Yogyakarta*

Life cycle	*Accumulation*		*Consolidation*		*Survival*		*Total*	
	N	%	*N*	%	*N*	%	*N*	%
TIRTOHARGO								
Young couples	-	-	1	25.00	1	25.00	2	16.67
Mature couples	3	75.00	2	50.00	2	50.00	7	58.33
Old couples								
Cross-generational couples	1	25.00	1	25.00	1	25.00	3	25.00
Total	4	100.00	4	100.00	4	100.00	12	100
GIRIASIH								
Young couples	-	-	1	12.50	-	-	1	8.33
Mature couples	1	33.33	1	12.50	-	-	2	16.67
Cross-generational couples	2	66.67	6	75.00	1	100.00	9	75.00
Total	3	100.00	8	100.00	1	100.00	12	100.00
SIDOHARJO								
Young couples	-	-			-	-		
Mature couples	1	20.00	3	50.00	1	100.00	5	41.67
Old couples	1	20.00	1	16.67	-	-	2	16.67
Cross-generational couples	3	60.00	2	33.33	-	-	5	41.67
Total	5	100.00	6	100.00	1	100.00	12	100.00
WONOKERTO								
Young couples	1	25.00	3	37.50			4	33.33
Mature couples	2	50.00	4	50.00			6	50.00
Old couples	1	25.00					1	8.33
Cross-generational couples			1	12.50			1	8.33
Total	4	100.00	8	100.00			12	100.00
ALL VILLAGES								
Young couples	1	6.25	5	19.25	1	16.67	7	14.58
Mature couples	6	37.50	9	34.61	3	50.00	18	37.50
Old couples	3	18.75	2	7.69			5	10.42
Cross-generational couples	6	37.50	10	38.46	2	33.33	18	37.50
Total	16	100.00	26	100	6	100.00	48	100

This approach is an attempt to cope with the high cost of living, education, and care of children in urban areas. With the same level of expenditure for a child's living costs, the money is more than sufficient if spent in the village as a remittance. These remittances are larger if the source of income is overseas employment.

There are indications that those people who adopt this strategy are mainly from consolidation households, which is understandable in view of the fact that the children of accumulation households are generally successful in employment elsewhere and therefore do not need to trouble their grandparents. By contrast, survival families do not have the capacity to facilitate the education and care of their children.

On the whole, cross-generational families are dominant in Giriasih but far less common in Wonokerto. This can be taken to mean that in areas of commercial farming the level of family welfare is already quite good and so households can encourage married children to live independently.

In Giriasih the migration of young, educated people is common and hence labor is scarce. The trends towards aging and depopulation in Giriasih are evident in the number of senior couples who live alone. This has had an impact on land utilization. In Giriasih there are three types of agricultural land, namely, valley land (*ngare*) for rice cultivation, terraced land above the valleys (*pereng*) for secondary crops, and land above the terraces for the cultivation of trees (*alas*). Because of the shortage of labor, the *pereng* land is no longer planted with crops but is left to the cultivation of trees for timber purposes. Meanwhile, farming is increasingly concentrated on rice land in the valleys. The consequence of aging and depopulation has been a reduction in population pressure on agricultural land. In time, this trend will open up opportunities for reforestation in Giriasih.

The impact of the crisis and coping responses

Variations in the impact of the crisis

As stated in the introduction, the economic crisis caused a rise in the cost of inputs and the prices of farm produce in rural areas. Profit or loss as a result of the crisis was determined by the ratio between agricultural production costs and the prices paid for agricultural products. The greatest price increases occurred in the case of chemical materials such as herbicide and pesticide, which meant that farmers tended to reduce their use of these two components. Fertilizer prices also went up but the proportion by which they rose was less than the increase in agricultural commodity prices. Besides that, the system of advancing supplies of fertilizer through the KUT credit program lessened the burden

for farmers and put the brakes on price fluctuations in the market. More than that, the crisis had a further effect in that it caused a rise in the prices of consumptive goods needed by the household. In this case the heavy burden resulting from the crisis was felt not by the landowner but by the cultivator, and particularly by agricultural laborers and tenant-cultivators whose income from agriculture did not undergo an increase proportional to the changes in the prices of consumptive commodities.

The summary given in table 5.9 of the findings of in-depth interviews shows that a distinction can be made between the direct and indirect influences of the crisis. Each type of effect can be applied to production aspects and also to consumption. The impact of the nature and scope of the crisis was felt differently, depending on the farm livelihood category and the characteristics of the household's life cycle. For that reason there are differences between those who gained and those who lost because of the crisis, that is, between winners and losers.

Apart from this, the effects of the crisis were like links in a chain. The crisis that was felt in cities had an impact in villages. Cases in Giriasih and Sidoharjo show that, to cope with the effects of the urban crisis, parents left children with grandparents in the village. The rise in the cost of living and of education in the city was overcome by transferring the burden to the village. With relatively regular remittances, children were able to continue their education in the village. The care of children was also entrusted to grandparents in cases where parents were employed as overseas workers.

Another effect that was borne by the village occurred in cases where urban workers were dismissed (PHK). In Giriasih there were two cases of workers who had been dismissed from employment in a city company and who went back to the village during the crisis. In both instances the people concerned returned to agriculture. Although in this case the scale is small, this is in keeping with the BPS assumption that the agricultural work force increased as a consequence of dismissals.

Nevertheless, remittances also operated in the opposite direction as a consequence of the crisis, that is, from the village to the city. This happened in Giriasih, where two accumulation families sent timber for building purposes to their sons in the city. At the time of the crisis, building materials in urban areas became very expensive, especially when the timber in question was teak wood.

Coping responses

The coping responses of households are the short-term responses which they make as a reaction to an unexpected crisis or to sudden shocks that could shake their livelihood system.

Table 5.9 *Variations in the impact of the crisis*

Nature of impact	*Aspects affected*	*Form of impact*		*Winners-losers*
		Negative	*Positive*	
Direct	Production	Increases in input prices, esp. chemicals (herbicide-pesticide), and in production costs: rental of equipment and workers' wages; increases in cost of public services/ facilities: fuel, transportation and electricity	Increases in commodity prices (greatest in cash crop commodities, horticulture, livestock)	Survival households in increasing trouble because of lack of capital; a tendency for accumulation households to make gains
	Consumption	Increase in prices of consumptive goods	Low dependence, substitution	Survival households have social safety networks
Indirect	Production	Tax increases, decline in community's purchasing power and demand for products, reduction in business demands	Investment of severance pay (PHK) and additional labor	Accumulation households face constraints because markets are weak; survival households are not greatly affected because of their subsistence orientation
	Consumption	Increases in cost of education and child maintenance	Remittances to and from urban areas	Depends on life cycle characteristics and the migration of household members

A distinction can be made between consumptive and productive coping responses. Consumptive responses are basically directed towards ensuring income and sufficiency in consumptive needs. In these responses there are choices that differ for each of the household livelihood categories. They include the following variables:

– labor force participation: increase – decrease
– employment: specialization – diversification

– income: maximization – reduction
– savings: accumulation – depletion
– cash-money: lending – borrowing
– consumptive expenditure: increasing – decreasing
– education and health expenditure: increasing – decreasing

Production responses are directed towards optimizing the level of production and profit by weighing up the different means of covering of food needs, marketing opportunities, and business risks. Depending on the typology of enterprises, productive responsives can cover:
– scale/area: expansion – reduction
– capital: investment – disinvestment
– commodities: specialization – diversification
– production orientation: commercialization – subsistence
– inputs: increase – decrease
– labor: increase – decrease
– production/yield: increase – decrease
– assets in the form of land, cattle, and machinery: increase – decrease

Both types of coping responses are expressed as net frequency indices varying between 0 and 1 in either a positive or negative direction, depending on the dominant response pattern displayed by the respective types of households (see tables 5.10 and 5.11)

Consumptive responses

SUSENAS data for the 1997-1998 period show a rise from 39.72 percent to 60.2 percent in the proportion of people who were working. On the one hand these figures can be understood as showing an improvement in the regional economy to such an extent that more labor could absorbed. On the other hand it could also be assumed that the increase in jobs occurred in the informal sector. The reason is that it was the formal sector that reduced jobs and even dismissed workers.

Labor participation shows differences due to the impact of the economic crisis. Labor participation in agriculture can take the form of an increase in numbers because of a decline in the capacity of the urban economic sector to absorb labor. An increase in numbers, however, does not mean an increase in paid labor. A rise in wages, although not as great as the increase in commodity prices, can actually mean a reduction in the use of paid labor. This means that increases or decreases can depend on needs and financial capacity.

As can be seen from table 5.10, in the more commercial agricultural areas like Tirtohargo, Sidoharjo, and Wonokerto, labor participation, in

particular that of family labor, tended to decrease in accumulation households. Accumulation farmers in Tirtohargo tended to shift from being owner-operators to being owner-managers. The rise in commodity prices and income provided scope for them to rely more on agricultural laborers. Because of the shortage of paid workers, members of accumulation households in Giriasih were forced to do agricultural work, although they undertook only minor jobs.

In contrast with accumulation families, farmers in the survival category endeavored to maximize the use of their own labor to ensure household income. In Giriasih, women in the survival category also undertook hoeing in the preparation of agricultural land. In other places this is rare because work of this kind is normally done by men. The impact of the crisis in agriculture is also the spin-off from the crisis in urban areas. The severance of work relationships in the city caused people to return to work in agriculture. Those who had capital from their severance pay were able to make investments. In Giriasih, respondents from consolidation households who had been dismissed from employment as shop attendants in Yogyakarta again took up work as farmers and

Table 5.10 *Consumptive coping responses of farm households by livelihood strategy in four villages in D.I. Yogyakarta*

	LP	*ES*	*IM*	*S*	*L/B*	*CE*	*EH*
TIRTOHARGO							
Accumulation	-0.33	0.75	1.00	0.75	0.00	1.00	0.75
Consolidation	0.75	0.50	0.25	-0.25	-0.25	0.50	0.25
Survival	0.50	0.00	0.00	0.00	-1.00	-0.50	0.25
GIRIASIH							
Accumulation	0.67	0.33	1.00	0.67	0.33	0.67	-0.33
Consolidation	0.00	-0.62	0.12	0.25	-0.37	0.37	-0.13
Survival	1.00	-1.00	0.00	-1.00	-1.00	0.00	-1.0
SIDOHARJO							
Accumulation	-0.40	-0.80	1.00	0.80	0.00	0.80	-0.40
Consolidation	0.17	-0.33	0.33	-0.17	-0.33	0.83	0.33
Survival	1.00	1.00	1.00	1.00	0.00	0.00	1.00
WONOKERTO							
Accumulation	-0.20	-0.60	0.80	0.60	0.40	0.80	0.60
Consolidation	0.57	-0.14	0.14	0.29	0.00	0.71	0.29
Survival							

L/B = lending/borrowing of money
LP = labor force participation
S = savings accumulation/depletion
ES = employment specialization/diversification
CE = cons. expenditure rising/falling
IM = income maximization/reduction
EH = saving on education and health

used their severance pay to buy land, livestock, and stands of teak trees. Other respondents from survival families were dismissed from factories in Jakarta and returned to work as agricultural laborers. In Sidoharjo and Giriasih, the participation of accumulation family labor fell because many workers had migrated overseas as TKI.

Specialization or diversification in work was practiced in different ways by different household strategy groups. The impact of the crisis on employment can be the reverse, depending on the level of income that is obtained. In commercial agriculture the rise in commodity prices encouraged accumulation households to undertake more specialization in their work. By contrast, survival households tended to prefer diversification in work because most undertook production for subsistence purposes, which meant that a rise in commodity prices did not influence their income. Specialization in work was determined by the degree of commercialization and intensity in production. In areas where agriculture is more intensive and more commercial like Tirtohargo and Wonokerto, accumulation households tended to specialize in agricultural work. Intensity in agricultural activities needs greater inputs of time and management, which leaves virtually no scope for a combination of jobs. Although agriculture in Wonokerto is also commercial, the production pattern in snake fruit cultivation is less intensive by comparison with that in Tirtohargo, and, for that reason, accumulation farmers were less specialized. The combination of jobs that they undertook involved either formal occupations or employment based on capital and self-reliance (entrepreneurship), which give high returns. These jobs included work as employees in the private sector, traders, sellers of noodles and meat-balls (*bakso*), and brokers.

In contrast with accumulation households, survival households were generally less specialized. Unlike accumulation households, they undertook diversification and combination of jobs in the types of employment that yield inadequate returns, like laborers who carry timber, carpenters, and the like.

Income maximization as an effect of the crisis did not occur evenly. Accumulation households are characterized by efforts to maximize income because they own business assets and have access to business opportunities and sources of income. The impact of the crisis, which caused the prices of food crops and livestock to rise, gave them additional business capital to increase their incomes. As the table shows, accumulation households in the four villages tended to obtain opportunities to maximize profits as a consequence of the crisis. The rise in the prices of commercial agricultural commodities was also strengthened by the growth in needs during the holiday period and the Idul Fitri public holidays. Attempts to maximize income included the pur-

chase of arable land and livestock and also of agricultural equipment for rental purposes.

Survival households are the opposite of accumulation households. They lack the capability to maximize income because of the low level of their assets and the weakness of their access to income sources. Survival households did not benefit from the crisis that caused commodity prices to rise because they concentrated on the cultivation of subsistence food crops. Even though the prices of food crops rose, they did not sell their products.

Increased savings occurred during the crisis period in accumulation households rather than in households that adopted other strategies, the reason being differences in asset ownership and production orientation. The crisis had an impact on increases in income, particularly among accumulation households. These households increased their savings in various forms, depending on the character of the region. Savings can be in the form of money, which is saved or put aside, jewelry, livestock, land as a business asset, and other goods. In Giriasih, savings also take the shape of stands of teak trees in agro-forestry areas.

The pattern among consolidation households is not very clear. Some experienced an increase in savings, even though the amount was far smaller than in accumulation households, while others reduced their savings in the face of the crisis. On the other hand, survival households experienced a drop in savings, especially in livestock. They sold the animals, thinking that the high prices brought about by the crisis would cover their daily needs.

Lending and borrowing in the four research villages tended to become increasingly less common. Perhaps this happened because of the availability of institutions that supplied loans in rural areas such as *arisan* groups, cooperatives, the farm credit program (KUT) and so on. An arisan group is an informal rotating credit association, and based on regular contributions of small savings from the members. Thus it was easy to obtain immediate cash for sudden needs to the value of Rp 100,000 in Giriasih. Accumulation households did not experience any financial difficulties. In the four research villages the access of some of these households to loans from the village unit bank was quite easy. In fact, in Wonokerto bank officials often visited accumulation households to invite them to borrow from the bank, although the households already had sufficient capital and did not need loans.

Survival households obtained loans from various sources, especially less formal sources, like neighbors, traders, the *arisan*, savings and loans groups, and the like, which have more flexible ties. Advance loans for production inputs through the KUT program were rarely used by survival farmers. In Sidoharjo, survival households did not dare make use of this program because they feared that, if their crops failed, they would be

trapped in debt. During the crisis period, survival farmers tended to economize in their use of inputs. In this matter of loans the proportion of consolidation households that borrowed was higher than that of survival households. The reason was that survival households often did not dare to borrow because of uncertainty in sources of income to repay the loan. Consolidation households, however, were willing to borrow because they had assets or financial resources that could be used to repay loans.

The increase in income as a consequence of the crisis was generally experienced by accumulation households. In Sidoharjo the prices of commercial commodities like cloves, coffee, and vanilla underwent a substantial rise. Nevertheless, this increase was felt specifically by accumulation farmers since not every household produced those commodities. Survival households tended to give priority to the cultivation of *sawah* through the sharecropping system. The same applied to producers of chilli and onions in Tirtohargo and snake fruit in Wonokerto. Apart from the impact of the crisis, the rise in prices was strengthened by the occurrence of public holidays and other holidays. As a consequence, consumptive expenditure increased for the accumulation group. An increase in consumptive spending was also apparent among consolidation households, although the proportion by which it rose was smaller than in the case of accumulation households. Consumptive expenditure among survival households tended to fall as they sought to economize. Survival households felt that they benefited from the social safety net that provided cheap rice.

In the case of consumptive expenditures for education and health, the effects of the crisis did not show a definite pattern, as table 5.10 reveals. It can be assumed that, apart from the existence of the social safety net in social and health matters, the life cycle also exerted a certain influence. In older households whose children already had their own families and no longer lived with parents, educational and health costs dropped quite significantly. In young households expenditure on education and health rose, although not very greatly because costs for children of school age were relatively small. In mature households expenditure on education and health generally rose.

In the case of elderly couples expenditure was smaller on the whole because children already had their own households or at least had completed their education. Old couples were frequently asked to mind children in Jakarta. They were also often asked to look after grandchildren who were entrusted to their care by the parents because expenses in the city went up as prices rose. In this case there was a transfer of crisis impact from the city to the village as part of the livelihood strategy.

Productive responses

It is likely that expansion in scale and/or area occurred among certain household groups. The crisis had an impact on income, which rose because the sales value of commodities also rose. It was accumulation households that mainly felt the benefits. On the whole, they expanded the cultivated area and scale of their farm undertakings. In Tirtohargo, increases in area and scale were undertaken by the young group because of the intensive nature of farming and the high labor input. Older accumulation households tended not to be expansionist. An increase in area was most dominant in Giriasih, where the age of farmers is irrelevant because of the less intensive nature of agriculture. Besides that, most of the land that was purchased was community forest land that did not require much care.

As table 5.11 shows, expansion in the area and scale of agricultural undertakings was not as great among consolidation households as it was among accumulation households. In Giriasih, buying and selling transactions on the whole included a shift in ownership status. In other

Table 5.11 *Productive coping responses by relative incidence and livelihood strategy in four villages in D.I. Yogyakarta*

	SA	*N*	*S/D*	*M/S*	*CI*	*LI*	*PO*	*A*
TIRTOHARGO								
Accumulation	0.33	1.00	0.67	1.00	1.00	1.00	0.67	1.00
Consolidation	0.60	1.00	0.60	0.60	0.60	0.60	0.60	0.75
Survival	0.75	0.00	0.00	0.00	-0.30	-0.30	0.25	1.00
GIRIASIH	*SA*	*IN*	*S/D*	*M/S*	*Ci*	*Li*	*Po*	*A*
Accumulation	1.00	1.00	0.67	1.00	0.67	1.00	1.00	1.00
Consolidation	0.25	0.25	-0.25	0.13	0.00	0.25	0.37	0.50
Survival	0.00	0.00	-1.00	-1.00	0.00	0.00	0.00	0.00
SIDOHARJO	*SA*	*IN*	*S/D*	*M/S*	*Ci*	*Li*	*Po*	*A*
Accumulation	0.80	0.60	0.20	0.80	0.80	1.00	1.00	0.80
Consolidation	0.50	0.50	-0.17	0.17	0.17	0.00	0.33	0.83
Survival	-1.00	-1.00	-1.00	-1.00	0.00	0.00	-1.00	0.00
WONOKERTO	*SA*	*IN*	*S/D*	*M/S*	*Ci*	*Li*	*Po*	*A*
Accumulation	1.00	0.60	1.00	1.00	0.60	0.80	0.80	0.80
Consolidation	0.29	-0.14	1.00	1.00	0.00	-0.14	0.14	0.29

SA = scale/area expansion or reduction
CI = capital inputs increase/decrease
IN = investment/disinvestment
LI = labor inputs increase/decrease
S/D = specialization/diversification of products
Po = production output increase/decrease
M/S = market/subsistence orientation
A = asset expansion (land, cattle, machines, transport)

areas, additions to scale and area were of a temporary nature and involved non-private land that usually consisted of village and office land. The tenancy system in Sidoharjo was based on one-fifth sharecropping. In Tirtohargo and Wonokerto, which are commercial farming areas, the rental of land occurred and was based on money.

Survival households tended not to undertake an increase in scale. In Sidoharjo there was even a reduction in scale and in the area of rented land, the reason being that households could not afford the necessary production costs as a consequence of the crisis. The proportion that experienced the greatest increase was in Tirtohargo, yet the scale of increase was small and on land that was not of good quality.

The strengthening of investment in agricultural production varied somewhat from one area to another. Investment covered the purchase of farm equipment like sprayers and water pumps in Tirtohargo, investment in land and livestock in Giriasih and Sidoharjo, and investment in land and transportation in Wonokerto.

A change in investment occurred on a smaller scale among consolidation households than it did among accumulation farmers. In Tirtohargo, investment was mainly in agricultural equipment like sprayers and water pumps. The same was true in Sidoharjo, where investment was made in draft animals, plows, and harrows. On average, investment in Giriasih was relatively smaller than among accumulation households. Some households even lost their investments when they felled trees for sale because they needed money. During the crisis, for example, there was one instance of a wedding, the cost of which took the whole of the household's savings in the form of stands of teak.

Specialization and diversification in agricultural production are determined by profits and the commercial orientation of production. Accumulation households tended towards specialization in production. There would appear to have been a tendency towards specialization as production became increasingly commercial in orientation, as happened in Tirtohargo and Wonokerto. By contrast, in Giriasih the agricultural approach of accumulation farmers was not specialized and was adoptive towards new kinds. The crops that were chosen were those that experienced a rapid rise in prices in times of crisis, such as ginger in Giriasih and snake fruit in Sidiharjo. Thus the crisis had an effect on the adoption of the types of commodities whose prices had undergone substantial increases.

In the more commercial areas and particularly in Wonokerto, the production pattern of consolidation households tended towards specialization. The same was true in places like Tirtohargo that were a little deficient in resources, whereas in upland Giriasih and Sidoharjo the trend was towards diversification. In Tirtohargo, where chilli and onions were cultivated for sale, there was a high level of commercialization. Rice is

usually grown to meet household needs among consolidation and survival farmers. For accumulation farmers, rice is a "default" commodity, because in the wet season, land is submerged and difficult to drain, which makes it impossible for onions and chilli to flourish.

Survival households applied a more diversified production pattern in order to supply their basic household needs. In Tirtohargo, besides growing rice, chilli, and onions, consolidation households also planted other food crops like lentils and corn.

Production orientation (market or subsistence) revealed a different effect stemming from the crisis. On the whole, accumulation households had a commercial or market orientation and they made efforts to reach wider markets. The sale of snake fruit in Wonokerto, for example, was expanded through outlet kiosks located on the roads leading in and out of Yogyakarta and through marketing outside the region. In less commercial areas like Sidoharjo and Giriasih, accumulation households marketed their products themselves. Wives took on an additional job as traders or else they opened kiosks in the market.

Survival households tended to be subsistence oriented. Although a rise occurred in the prices of agricultural commodities, they had neither a surplus to sell nor the capacity to undertake selling. In Giriasih, the effect of the crisis was an increase in commodity prices. The price of dried cassava (*gaplek*) went up almost three times, rising from Rp 250 to Rp 725 per kilogram, while corn went from Rp 500 to Rp 1,500. But survival households tended to keep their products as food reserves, in addition to stores of rice.

Investment capital was also affected by the crisis. The capital invested in inputs by accumulation households went up because of the crisis-induced price rise, especially for the various types of pesticide. Nevertheless, these farmers continued to buy it, whatever the price. The cost of purchases was made a little lighter by the farm credit program, which provided advances for agricultural inputs. Consolidation households reduced their use of inputs to the point where the need for investment capital remained the same. These households gave greater priority to continuity and security in undertakings in other sectors like education and to the need for consumptive goods. A fairly large increase in investment occurred among consolidation households in Tirtohargo in the form of agricultural equipment (water pumps) and livestock.

The capital invested by consolidation households tended to remain the same. The rise in the prices of inputs did not cause much disruption in villages like Sidoharjo and Giriasih, where intensity in the use of inputs was not very high. Furthermore, in these two villages the role of the farm credit program gave sufficient assistance through advances of farm inputs. In villages where there was high intensity in the use of inputs, a reduction in capital investment occurred. The same pattern ap-

peared in the use of labor, whereas the response of survival households to the crisis was to reduce the use of inputs and paid labor. Survival households did not dare use the credit advances from the farm credit program because they felt worried about the installments they would need make in order to repay the credit.

The crisis affected labor inputs in agriculture in the level of wages and also in the availability of laborers. The input of paid labor on the land of accumulation households tended to rise. Part of this increase was traceable to the fact that family members reduced their work in agriculture, while part was due to expansion in the scale of undertakings. Consolidation households responded by maintaining the situation as far as labor inputs were concerned. Consolidation households in Wonokerto in fact reduced their use of paid labor, while consolidation households in Tirtohargo did the same, as long as the production process was not disturbed. On the other hand, survival households tended to increase family labor participation in order to obtain additional income or to reduce production costs. They did this because, while the crisis had an impact in the form of the increased prices of goods, they themselves did not enjoy the increased value of agricultural commodities.

Agricultural yields and production also proved to have been influenced by the crisis. Unlike the assumption that agricultural production must have experienced a drop because of the high cost of inputs, statistical records show that production of rice, soybeans, and corn actually rose. Data from the four research villages have also shown that there was a rise in production, although it was mainly accumulation households that experienced the increase. This increase occurred primarily because of expansion in the area under cultivation. The accumulation households that did not expand the scale of farming were mainly those that had begun to withdraw from agricultural activities because of advanced age.

Consolidation households made a different response in the matter of farm output. They tended to safeguard consumption needs and to remain at whatever production level they had previously achieved. Increased production occurred mainly in Tirtohargo. The response of consolidation households that experienced an increase was a little better than that of survival households; nevertheless, it was not large by comparison with accumulation households. Most of these households tended to ensure that production remained stable.

Changes in the area and scale of agricultural undertakings had an impact that was not in proportion to the production of survival households, because it was not accompanied by increased investment or by a reduction in invested capital, as happened in Tirtohargo. On the whole, there was no increase in production as a response from survival households.

An increase in household assets occurred because of increased income as a result of the rise in commodity prices. This increase was experienced mainly by accumulation families and took various forms. In Giriasih, increased assets were in the form of land because people who moved from the area sold their agricultural holdings. In Tirtohargo, the increase in assets consisted mostly of agricultural production equipment like sprayers and water pumps. In Sidoharjo, the additional assets were mainly livestock, while in Wonokerto additional assets took the form of vehicles for transportation purposes, with a small proportion in the form of land.

In a number of accumulation and consolidation households in Giriasih and Sidoharjo there was a reduction in assets, but this was not a direct consequence of the crisis. The reduction occurred, for example, in the contribution and transfer of timber to the city for construction of an adult child's house. This was done because of the high price of building materials, especially wood, during the crisis. In other words, there was a remittance flow that was the reverse of the conventional pattern, in which it is generally understood that remittances always originate in the city and go to the village, rather than the other way around.

Conclusions

The following conclusions might be drawn from the proceedings analyses:

1. The crisis clearly varied in its impact on agriculture. There was a direct effect connected with the structure of production in the form of an increase in the price of inputs and an increase in selling prices for agricultural commodities. The profit or loss accruing to the farmer depended on the intensity of use of inputs and the level of commercialization of production. The greatest profit was obtained from commodities for which the use of inputs was not very intensive but which had high commercial value. Apart from the "terms of trade" between agricultural inputs and products, profit was also counterbalanced by the rise in the prices of other comsumptive goods.
2. The system of intensive commercial horticulture was most vulnerable to the crisis because it faced an increase in the cost of inputs and a fall in the purchasing power of the community. The system of subsistence food crops combined with agro-forestry or perennials has proven to be more resistant to the impact of a crisis. The system of commercial production of perennials or commercial horticulture whose production inputs were relatively small and consisted of organic matter actually benefited from the crisis because the cost

of inputs remained relatively fixed while the value of the (exported) commodities rose.

3. The effects of the crisis also varied with the livelihood strategies of farm households. Accumulation households gained greater profits because of higher commodity prices, whereas survival households tended to be weakened by the crisis. Because of their limited assets, the latter concentrated on subsistence food crops, which were frequently not sufficient for household consumption over a period of one year. These households also could not benefit from the rise in the value of some food commodities while they still had to bear the burden of increased costs for production inputs (sometimes bought with side incomes from non-farm jobs).
4. Besides demonstrating rural resilience, the crisis also strengthened the function of villages as a buffer between the urban community and the local economy. In certain cases, the crisis gave rise to a flow of remittances from the village to the city in the form of both money and materials. The rural situation offered a solution for households that felt the pressure of the crisis in the city, for they were able to transfer the burden to the village, that is, by moving children and entrusting their schooling to grandparents living in the village. Apart from this, the village also became a buffer for the city by absorbing workers who had been dismissed from jobs in the urban formal sector.
5. Accumulation households were not always characterized by expansionism in farming. Some of them tended to be conservative and to withdraw from intensification in agricultural production because of advanced age. Households were able to move from the survival to the consolidation category because their children had become independent. For that reason changes in livelihood category sometimes occurred not because of changes in livelihood aspects but because of the life cycle.
6. The crisis had a differential effect on the choice of agricultural commodities. Farmers in Sidoharjo and Giriasih adopted new commodities like snake fruit and ginger, for which there was a substantial price increase during the crisis period, whereas other farmers in commercial areas felt no need to change the commodities that they had been cultivating, or were caught in rigid food crop systems that were difficult to transform without high investments.
7. The combination of agricultural and non-agricultural employment represents a flexible livelihood situation. Accumulation households often had other non-agricultural occupations that tended to be of a formal nature (employment as public servants and private employees), while consolidation households tended to have additional work that was self-enterprising (in trade, cottage industries, and broker-

age) and survival households did extra work as manual laborers without capital (that is, as timber-carrying laborers, agricultural laborers, and construction workers). With this type of job combination, survival households benefited the least during the crisis because their real wages as laborers remained relatively fixed.

6 Livelihood Strategies, Responses to the Crisis, and the Role of Non-Agricultural Activities in Five Villages in the Special Region of the Yogyakarta

R. Rijanta

Introduction

The connection between livelihood systems and coping strategies at various social levels and in various types of economies and regions has become an important issue in the discussions on the effects of the economic crisis in Indonesia. Strategies to handle the crisis as a part of livelihood strategies are defined as the efforts of households or individuals to manage their natural capital, physical capital, economic capital, and social capital in earning a livelihood through attempts to control decreases, to find solutions to constraints and to utilize the opportunities that appear in daily life (Davis 2003 and 2004; Chambers 1989; DFID 1999). Non-agricultural activities play an increasingly important role as a consequence of the growing strength of the processes of regional integration, commercialization, and diversification (cf. Niehof 2004). In a situation of crisis it is necessary to know whether the non-agricultural sector offers adequate flexibility or opportunities as one means of overcoming the crisis (cf. Gordon 1999; Barrett et al. 2001, Lanjouw & Lanjouw 2001; Wandschneider 2003; Davis & Bezemer, 2003 and 2004).

The purpose of the present study is to make a contribution to this discussion from a socio-spatial perspective. The research was undertaken in the Special Region of Yogyakarta (DIY) and includes urban and rural villages. It focuses attention on differences in livelihood strategies, the impact of the crisis, strategies to deal with the crisis, the dynamics of livelihood strategies, and the role of non-agricultural activities as part of the household's livelihood strategies during the crisis period.

The research was carried out in two stages, in 1998 and 2003. The first stage was undertaken at the beginning of 1998, at a time when the Indonesian community had not yet felt the worst effects of the crisis. A return visit was made to the villages in 2003, when respondents, who had been chosen in a purposive manner to represent all household levels, were interviewed. The number of respondents was reduced rather drastically, but interviews were of an in-depth nature and in-

cluded retrospection concerning household changes over the preceding five years.

Interviews focused on asking what changes had occurred in the household's economic activities and demographic structure during the five-year period. Analysis was done by means of cross tabulation and indexing in order to simplify the presentation of each variable in livelihood strategies and dynamics over space and time. Part of the analysis results have been presented visually through tables, making it easy to examine them in order to observe the patterns of household responses and dynamics. Interpretation of the tables has been done with the assistance of field notes from in-depth interviews and with the help of certain relevant theories.

The setting of research villages

The variations in the agroeconomic conditions of DIY have been simplified into four categories: the upland area with extensive dry farming, the upland area with intensive dry farming, the lowland plain with intensive rice cultivation, and the lowland plain on which non-rice crops are cultivated and irrigated rice fields (*sawah*) are not the dominant form of land use. In addition to these four types of regions and villages, a fifth research village has been added to represent villages on the urban periphery. The characteristics of each of the research villages have been generalized below.

Tepus village represents the agroeconomic type in which an upland area has agricultural activities of an extensive nature that depend on rainfall. This type produces subsistence commodities like secondary crops, firewood, handicrafts, and building materials. It represents the part of DIY that is most backward and most isolated from the center of economic activities. Out-migration and circular migration are the most common forms of population mobility. Diversification in village life is greatly limited by the low population threshold and physical isolation from the center of the regional economy.

Wonokerto village is located on the slopes of Merapi volcano in the District of Sleman. This village was chosen to represent an upland agroeconomic area with intensive agricultural activities. The commercial commodities that are produced include snake fruit, cloves, cocoa, vegetables, mushrooms, and spices as well as firewood, handicrafts, and building materials. Population movement from this village to the nearest town is undertaken to obtain production inputs, to handle marketing and to obtain social, economic and commercial services. Labor shortages are a problem at the present time, right when commercial and intensive expansion of the agricultural sector is leading to a rise in

community welfare. The explosion of investment in the agricultural sector has improved livelihoods substantially. This can be seen from the appearance and quality of housing materials, the self-reliant capacity of the community, ownership of motor vehicles, capacity to pay for higher education, the frequency of pilgrimages by members of the community and fulfilment of various tertiary needs. Expansion in livelihood diversification in this village was triggered by the simultaneous diversification and commercialization of agriculture.

The intensive *sawah* area is represented by Srimulyo village in Piyungan Subdistrict. Rice is the most important crop as a source of subsistence, income, and employment. Technically irrigated *sawah* form the basis of agricultural activities in this agroeconomic region. The characteristics and nature of livelihood diversification in this village differ greatly from those in other villages, specifically in the allocation of resources and the relationship between the agricultural and non-agricultural sectors at the household level. This relationship is increasingly complex if the proximity of the village to the city of Yogyakarta is taken into account. In this village, commuting to Yogyakarta is an important part of livelihood strategies involving non-farm activities. It has been postulated that villages based on wet rice cultivation can develop a high degree of diversification because of the regularity in time allocation in agriculture as a result of the use of irrigation (cf. Braay, 1986).

Brosot village was selected to represent the non-intensive lowland agricultural type. *Sawah* are not the dominant form of land use in this agroecological region, where the agricultural sector relies on the cultivation of perennials, with annuals grown on home lots (*pekarangan*) and dry fields (*tegalan*). Only a few village people own *sawah* land, part of which is located outside the village. Given the limited agricultural resources of the village, diversification in livelihoods towards the non-agricultural economy is a necessity if people are to meet subsistence requirements. The variety in livelihood diversification in this village has been determined by its relative location and its history as a subregional economic center since colonial days. Village industrial activities in the form of food processing rely on markets in the local area, which has a high population density, or else on markets in Yogyakarta, which are easily reached by good public transport services.

In morphological terms, Maguwoharjo village is a part of the city of Yogyakarta, although administratively it is an autonomous village in Sleman District. Agricultural activities are still to be found in certain parts of the village, where food crops, including vegetables, are produced for sale in Yogyakarta. Economic and spatial transformation has occurred extremely rapidly and is marked by the emergence of urban-oriented forms of land use and by the appearance of non-farm economic activities. One aspect has been the rapid change in the local people's eco-

nomic activities as the non-agricultural economy becomes increasingly important due to large-scale service activities.

By comparing the background, structure, process and consequences of rural diversification in the four rural villages with Maguwoharjo as a control, it is possible to obtain a full picture of the diversity in household responses to the crisis. Similarly, the dynamics and varieties of rural diversification in the rural villages can be understood more clearly because contrasting comparisons are available.

Livelihood conditions and household strategies

Types of livelihood conditions

The conditions and strategies of household livelihoods in the present study are differentiated into three types, based on the influence of household livelihood variables that cover household assets, activities, and capabilities (Ellis 2000; Davis 2003; Start & Johnson 2004). Assets or capital are represented by the natural conditions of the village (natural capital), ownership of land, machinery, production equipment and the work place (physical capital), human resources within the household (human capital), social networks (social capital), and financial capital. These assets are mobilized by the household through various activities that use certain strategies in the context of achieving the household's livelihood objectives.

From the analysis of household activities, assets, and capabilities, three types of household livelihood situations can be distinguished in the research area, namely, a mere survival situation, a consolidation situation, and an accumulation situation. The table in annex 1 gives a generalized description of the characteristics of each household in the three livelihood situations. The results of the study show a consistent pattern in which the majority of households in all villages fall into the consolidation category. Approximately half of all households are included in this category, while, of the rest, about a quarter are accumulation households and a quarter are in the survival category (table 6.1).

Households in the mere survival situation tend to own very limited assets and to be involved in economic activities of low productivity and social status. In meeting subsistence needs they work hard to maximize the use of both land and non-land household resources. For that reason they can achieve only the short-term objectives of life. The most important characteristic of this group is its expenditure pattern, more than 50 percent of which is dominated by foodstuffs. These households, which tend to have a relatively large number of members, consist of people of both productive and non-productive age, but composition is unbalanced. They participate very little in social obligations

Table 6.1 *Classification of the household livelihood situation in the five villages, 1998 and 2003*

Name of village	*Livelihood situation*					
	Accumulation		*Consolidation*		*Survival*	
	1998	*2003*	*1998*	*2003*	*1998*	*2003*
Brosot	3	3	5	6	4	3
Maguwoharjo	3	3	5	4	4	5
Srimulyo	3	2	6	8	3	2
Tepus	3	1	5	6	4	5
Wonokerto	2	3	6	6	4	3
Total	14	12	27	30	19	18

Source: Survey data, 1998 and 2003

and many make use of local, informal social networks in solving livelihood problems.

The households in the survival situation belong to extremely small farmers who combine farming with non-agricultural work that is not very lucrative. Landless households that depend entirely on non-agricultural activities also constitute an important part of this group. Survival households have a heavy demographic burden and experience uncertainty in obtaining income, which means that they are chronically in debt within their social network, and many of them are the target of the government's social security programs.

Consolidation households have sufficient land and non-land resources to enable them to meet their subsistence needs. Households in this category have a rather high social status and lucrative non-agricultural work, which enables them to undertake consolidation to achieve medium-term and long-term objectives. This is reflected in their low expenditure on foodstuffs, but relatively large outlay on education, basic health services, energy, and transportation. Households in the consolidation situation utilize resources in reaching medium-term and long-term goals through the local, non-local, and more formal social networks. Although consolidation households have control over rather limited assets, they can achieve a standard of living above subsistence needs. The consolidation strategy that they undertake involves efforts to maintain the living standards that they have already attained but without putting aside long-term objectives through investment in their children's education or the construction of production facilities and the purchase of land.

The increase in educational costs has made most of the consolidation households redefine their priorities between meeting children's educational requirements and meeting other needs. Consolidation households have a fixed source of income at a level above subsistence, but

they have to bear the cost of the education and health of children of school age.

Accumulation households have strong control over abundant resources in the form of land and non-land assets as well as access to information about prospective business opportunities. Livelihood diversification is intended to expand and strengthen the basis of the household economy. This group has control over a large amount of land. The basis of the economy of households in this category consists of medium or large-scale non-farm undertakings involving large capital or employment that requires expertise and has high social status, which makes their income also high. The households in this group are quite responsive to change and are progressive in grabbing opportunities to improve their situation despite high risks. The household expenditure pattern is dominated by non-primary and non-food needs, such as energy, higher education, and modern health services. Their social network is utilized to obtain non-economic advantages. This group does not make use of its social network to overcome financial problems.

Households with accumulation characteristics adopt long-term measures similar to those of consolidation households but with greater intensity and capital support. They respond to crisis conditions by investing in cash crops, production equipment, and the construction of places of business. Another matter that distinguishes accumulation from consolidation households is the more advantageous demographic setting of the former. The household head is usually of mature age, with children who are already grown up. Some have grandchildren living with them. Income obtained from non-agricultural sources is used to carry out further accumulation. For other households in the accumulation category, the non-farm economy is the main source of livelihood, while agriculture tends to be carried out as a secondary activity or to be handed over to other people through sharecropping (Hart 1980; Evans & Ngau 1991). They control land as a form of accumulation to obtain social status or for long-term speculation.

The characteristics of livelihood strategies between villages

If the variations between the research villages are examined, a number of interesting trends can be found in household livelihood strategies. Even in a crisis situation, there are still a few households that are able to undertake accumulation in several different forms. The rural households able to undertake accumulation in meaningful amounts were found in the villages of Brosot, Maguwoharjo, and Wonokerto, which are discussed below.

Accumulation in Brosot was done through non-farm activities in response to the need for goods and services that originally came from the

city. Among these urban goods and services that are now provided in the village are furniture, certain building materials, household equipment, food for special celebrations, and services like beauty salons and computer rental for schoolchildren. The crisis, which had caused the prices of manufactured goods to rise, apparently provided an opportunity for well-off households to supply substitutes for certain goods and services. Among the most noticeable services provided by local households are catering and food processing for ceremonial meals and parties. Since the crisis certain kinds of food for parties have been supplied by local households that have the necessary capital and skills. These opportunities have encouraged the households concerned to persevere seriously in the catering business by investing in the purchase of cake-making utensils and party equipment. Other households have undertaken accumulation through telecommunication services in the form of communication kiosks (*wartel*). The households that own a telecommunications business also have a strong base in the form of agricultural resources. In size their holdings are around 1 hectare of *sawah* with a home lot of 0.5 hectares, which is large by the standards of these villages and of Java. The share percentage with the government for *wartel* has already decreased and the business has been less profitable since the crisis. Apart from that, there has also been a relaxation in the permit system for the establishment of new *wartel*. Nevertheless, since the crisis there has also been an increase in the number of customers for international communications because many families have members who are employed as Indonesian workers (TKI) in Kuwait, Saudi Arabia, Hong Kong, Korea, Malaysia, and Brunei. Because of an increase in the number of TKI from surrounding villages, the increase in demand for telecommunication services can be said to be a further consequence of the crisis that brought profits to those households that owned telecommunications businesses.

Meanwhile, the Brosot households in the consolidation category have endeavored to maintain their standard of living and their economic activities primarily by undertaking specialization in the non-agricultural sector. It appears that non-farm activities were the final course by which consolidation households could maintain their lives as before. A similar situation prevailed among survival households, which tended to hold down consumption and to maximize the use of family labor in order to achieve subsistence. The pattern of operations of non-farm activities that they adopted became more aggressive in reaching marketing locations in distant places. This is particularly relevant in the case of makers and sellers of ice cream in this village.

The Maguwoharjo households that undertook accumulation are the owners of lodgings for university students. The crisis provided a big economic opportunity for local people who owned boarding accommo-

dation. Several regions outside Java that are students' places of origin experienced a boom in income from export commodities, for most of these commodities underwent a significant rise in their rupiah value, to the point where both smallholders outside Java and the owners of student accommodation in Yogyakarta regarded the crisis as a blessing.

By contrast, survival households in Maguwoharjo also maximized their use of family labor and reduced the quality of their daily food, without reducing the frequency of meals. A number of survival households employed all members of the household, including women and children who normally did not work. A pattern similar to the behavior of survival households in the city was also found among consolidation households, even though they had more adequate assets and activities.

The households that were able to undertake accumulation in Wonokerto were those that owned large land holdings and grew commercial crops. As the prices of non-rice agricultural commodities rose, the farming households in this village earned greater profits that far exceeded their subsistence needs. This was followed by a shift in the pattern towards the fulfillment of "prestige" status requirements such as a four-wheeled motor vehicle and electronic goods. Investment in non-agricultural activities represented accumulation efforts that were based on a surplus from the agricultural sector. Many of the accumulation households in Wonokerto sent children to higher education institutions or undertook the pilgrimage to Mecca on a personal arrangement through the exclusive channel, which costs approximately US $3,700 per person.

Meanwhile, consolidation households in Wonokerto generally also had a combination of rather small agricultural activities, plus non-agricultural activities that were likewise not very large. At the same time, survival households in this village were primarily those that did not own agricultural land and were dependent on marginal non-farm activities or employment as agricultural laborers as their main job.

The Dynamics of livelihood strategies by agronomic region

The diversity in resource use at the regional level makes an important contribution to explanations of the variety in changes in livelihood conditions in DIY, since the crisis produced changes in livelihood conditions between villages that varied with the type of resource use. Most households experienced stagnation in livelihood conditions between 1998 and 2003 (table 6.2). The households that experienced degradation are generally found in villages with urban characteristics, villages based on wet rice cultivation, and villages dependent on dry farming. Besides this, promotion in livelihood strategies was found in villages with commercial agriculture and non-*sawah* villages on the plain.

Table 6.2 *Changes in livelihood conditions by economic basis of villages, 1998-2003*

Change	*Urbanized*	*Lowland non-rice*	*Lowland rice*	*Dry upland*	*Wet upland*
Degradation	16.7	8.3	25.0	33.3	16.7
Stagnation	75.0	75.0	66.7	58.3	41.7
Promotion	8.3	16.7	8.3	8.3	41.7
Total (N)	12.0	12.0	12.0	12.0	12.0
Total (%)	100.0	100.0	100.0	100.0	100.0

Source: Survey data 1998 and 2003

In the village on the urban periphery, stagnation in household living conditions as a consequence of the blow inflicted on the urban economy during the crisis gives an indication of how small the benefits of the economic boom from the rental of accommodation were for the majority of the people. Some households that were able to survive in stagnation utilized the linkages that emerged from the existence of rental accommodation to work as suppliers of goods and services for students. The competition among service providers to take over public space in the vicinity of rented accommodation gave rise to new phenomena as trespassing on public space for economic activities grew stronger.

The lowland non-rice village reveals the presence of households that experienced stagnation in livelihood strategies to the greatest extent, followed by those that experienced promotion or degradation. Households that underwent stagnation in non-rice rural areas depended mainly on the non-farm economy, which experienced the strongest spin-off from the crisis. The majority of households in this village relied upon the non-farm sector, which was stagnant, because their economic activities had been disturbed by the weak purchasing power of the community. The collapse of the bridge linking Yogyakarta and Bantul exacerbated the condition of the village economy as a consequence of the rise in the cost of transportation to obtain inputs and to handle marketing.[1]

Meanwhile, in the lowland non-rice village the households that managed to achieve accumulation were those that succeeded in finding commercial opportunities for the provision of goods and services which had originally been obtained in the city and whose prices had soared at the time of the crisis. The ability of households to capture opportunities to supply substitutes for goods once obtained in the city at proper prices enabled a number of households operating in the field of catering and party food to undertake accumulation. The same success was achieved by households that ran telecommunications kiosks as the use of these kiosks had undergone a boom since the crisis, which occurred together with the increase in the number of people from surrounding villages working overseas as migrant workers.

Besides this, producers of *tahu* (tofu) and *tempeh* (soybean cake) also enjoyed large profits at the peak of the crisis. There was a drastic but

temporary rise in demand for products made from *tahu* and *tempeh*, as these products were able to replace other necessary sources of protein that were usually brought from the city, in particular fish, meat, eggs, and chicken. After the peak of the crisis was over, however, it turned out that members of the community no longer restricted consumption but returned to the normal situation, which meant that consumption of *tahu* and *tempeh* also fell to normal levels. The same was also true of goods that had previously been brought to the village from the city, for they too were again available as they had been before the crisis. The jump in demand for *tahu* and *tempeh* at the peak of the crisis was only a short-term phenomenon.

The lowland rice villages experienced the strongest spin-off from the crisis. Villages whose economic basis is the cultivation of irrigated rice (*sawah*) represent an important part in agricultural development undertaken by the government in the context of achieving national self-sufficiency in rice production through a number of interventions. The economic crisis forced the government to reduce tariffs on imported foodstuffs in stages and to do away with various subsidies on agricultural inputs. For that reason the households of the majority of extremely small farmers and the landless in these *sawah*-based villages fell into the category of stagnation and degradation.

Among the community group that operated in the field of commercial trade in agricultural produce, there were actually indications of the presence of a promotion in livelihood strategies. Traders in agricultural commodities were able to increase their margin of profit because the rise in purchasing prices at the community level was still smaller than the increase in price that could be obtained from large city traders, who had direct contact with overseas markets.

Households in upland areas of dry and marginal farming also experienced great stagnation and degradation as a result of the reduction in or removal of subsidies by the government. Households in these villages were able to undertake agricultural activities in a viable way because production inputs received big subsidies. The increase in the prices of agricultural inputs for farm households in the dry-farming region was felt to be the cause of a drop in the output of various commodities. As a consequence, most of the households in this region experienced degradation or stagnation in their livelihood strategies in the aggregate sense.

The role of activities related to the cultivation of secondary crops in the agricultural system of this region is undergoing a significant decline. The fact that many of the younger generation have left their villages to work in urban areas has disturbed agricultural activities because it makes the shortage of labor in the planting season more acute. This has encouraged a shift in the planting pattern from one in which

annuals are dominant to one in which perennials that produce wood and various fruits are important, as well as grass for use as livestock fodder. Those who work in urban areas more often make village investments in the animal husbandry subsector (cattle and goats) by utilizing the grass and the limited labor that is available.

Although the dynamics of life since the crisis in this region of marginal farming are very high, the products are not yet able to raise or maintain the position of households at a higher living standard. Most of the households exist in a position of stagnation or degradation in living conditions. Changes of a positive nature, such as the increasingly inexpensive supplies of water for domestic needs or for cultivation purposes, have not yet been able raise the quality of life significantly for the majority of community members.

As a whole, the commercial agriculture area on the slopes of Mt. Merapi is a region that is undergoing a boom in farm production through agricultural intensification and diversification. The commercial agriculture developed by the community no longer involves production of rice as the basic foodstuff, which means that the effect of a rise in the price of inputs can be compensated for by high-value commodities whose price is not set by the government. Nevertheless, up to 2003, most of the households were still in a position of livelihood stagnation, but another section of the community actually experienced promotion. Those who have undergone promotion are households with a strong agricultural resource base in the form of fields of high-value commercial crops that are in full production. The households of farmers who grow *salak pondoh* (a special type of snake fruit) accumulate very large amounts of income every year to the point where they can afford to meet the needs of life at a level far above the average. The capacity of accumulation households to make the pilgrimage to Mecca, purchase four-wheeled vehicles, and pay for their children to do tertiary studies is an easily pictured example of the success of accumulation households.

In this region of commercial agriculture the community group that is forced to experience degradation consists of those who own no land and whose survival depends on work as agricultural laborers or as odd-job laborers. Agricultural wages here are certainly slightly higher than in other regions. Even so, in a situation like that of today, where there has been a rise in the various necessities of life, agricultural laborers constitute the most vulnerable group and have the greatest chance of experiencing a degradation in livelihood strategies. Nevertheless, degradation in livelihood strategies has also occurred in this region as the result of a household member's serious illness, treatment of which took all the household's assets, which were originally quite large.

Table 6.3 shows that households that have undergone degradation and promotion tend to be found in rural villages, whereas those that

Table 6.3 *Changes in livelihood conditions in rural and urban villages, 1998-2003 (percentages)*

Location	*Degradation*	*Stagnation*	*Promotion*	*Total*
Rural villages	20.8	56.3	18.8	100.0
Urban villages	16.7	75.0	8.3	100.0
Total (N)	12	38	10	60

Source: Survey data, 1998 and 2003

have experienced stagnation are more common in urban areas. This strengthens the preliminary suspicion that the open nature of the non-farm economy in cities has caused most households to experience stagnation or to be degraded to worse livelihood conditions. Besides that, the small variety of open-access resources available in urban areas is also an important cause of this situation. By contrast, the fact that some rural households experienced promotion of a percentage higher than that in urban areas can be explained by the relatively closed nature of the village economy and the availability of natural resources to which access is still open. This includes activities outside agriculture that can replace urban economic activities which were increasingly constricted at the peak of the crisis.

The crisis and its impact on livelihood strategies

Responses to the crisis

The responses of the rural community to the crisis can be divided into two types, namely, consumption responses and production responses (Titus 2003). Consumption responses can be examined from changes in the level of labor force participation, the extent of diversification or specialization in employment (including the role of population mobility), increases or decreases in income, rises or falls in the amount of savings, the borrowing or lending of money, and rises or falls in consumption expenditure in the context of maintaining the quality of life. Production responses represent one kind of reaction to the crisis and are reflected in both the agricultural and non-agricultural production processes carried out by a group of people living in one household. Production responses are approached through such indicators as the lack of expansion in scale and work region, investment or disinvestment, specialization or diversification, production orientation to meet market or subsistence requirements, and the intensity of use of capital inputs and labor inputs. Households in the different livelihood strategy categories have responded in a combination of different ways to the crisis that is still continuing in Indonesia at the present time. The following

section discusses the results of an analysis of household consumption responses and production responses based on the livelihood conditions that they have achieved.

Consumption responses

Households with survival strategies

A general picture of all respondents in the present study shows that there have been different patterns of response to the crisis situation among households in accumulation, consolidation and mere survival conditions. Survival households tended to intensify the level of participation of their labor force, specifically for economic activities that were carried out at their own risk (LP). They tended to undertake employment specialization in just a few activities (IS), with the result that in crisis situations they did not dare or else did not have the ability to take the risk of attempting diversification. This same group of survival households also experienced a fall in savings, which they had held in various forms such as jewelry or livestock (poultry and cattle) (SI). For that reason, survival households were forced in matters of urgency to make use of their relatively narrow social network (LB) to borrow money or jewelry from a number of people. One matter experienced specifically by households that depended on survival strategies was the occurrence of both absolute and relative increases in expenditure on daily consumption necessities (CE) (table 6.4).

Households with consolidation strategies

Consolidation households undertook intensification in their labor force participation at a lower level than did survival households (LP). This group responded to the crisis by undertaking selective specialization in low-risk economic fields rather than by attempting diversification (ES). Many consolidation households actually reported a rise in income in nominal terms but their purchasing power still fell drastically (IM).

Table 6.4 *Scores for consumption responses by livelihood strategy, 2003*

Strategies	*LP*	*ES*	*IM*	*SI*	*LB*	*CE*
Accumulation	0.154	-0.154	0.077	0.231	0.385	0.000
Consolidation	0.258	0.258	-0.032	0.000	0.129	0.742
Survival	0.313	0.125	0.125	-0.125	0.250	-0.063
Average	0.279	0.154	0.086	0.068	0.229	0.378

LP : labor participation
ES : specialization in activities
IM : income maximalization
SI : a rise or fall in savings
LB : borrowing or lending of money
CE : consumption expenditure

Source: Survey data, 1998 and 2003

They therefore attempted to maximize income in various ways. Some of the households in this category experienced a drop in the amount and type of their savings, which consisted of money in the bank, livestock, and jewelry (SI). The consequence was that some of them borrowed money from the bank to meet certain urgent needs (LB). Consolidation households also experienced a relative increase in expenditure on the food that they needed for consumption purposes (C).

Households with accumulation strategies

In general, labor participation in households that undertook accumulation was rarely increased and was far below the average for consolidation households (LP). These households could afford to send their children to higher-level schools and made up their need for labor with hired workers. In addition, accumulation households accommodated their relatives in their economic activities not to expand production but rather with the intention of helping the latter. In carrying out their economic activities during the crisis, accumulation households acted somewhat conservatively by just maintaining what they had hitherto achieved. The tendency towards diversification (ES negative) reflected the houshold's capacity to go in for more profitable activities of a nonfarm nature. Maximization of income was not their main motive at the time of the crisis (IM). Their motivation was not excessively focused on attempts to maximize income but was a little more relaxed, consisting as it did of efforts similar to those made by consolidation households. Thus in general there were no systematic attempts on the part of most accumulation households to undertake income maximization by, for example, reducing labor in order to increase income or by adopting other efficiency measures (IM). The amounts and types of savings held by the accumulation group were also sufficiently stable at a fixed or increased position. This was far better than the average situation, which tended to decline (SI). Even though their assets in savings and other forms tended to be reported as fixed, this group did not borrow from the bank to maintain their standard of living or to expand their businesses. On the contrary, several persons from the same village borrowed money from these households (LB). The group of accumulation households also tended to maintain their high standard of living, which they continued to enjoy during this period by maintaining their consumption pattern (CE constant).

Production responses

On the whole, households in all villages in the research areas showed a tendency to expand their scale and work area slightly, to carry out a little investment in production assets and to undertake diversification in pro-

Table 6.5 *Scores for production responses by livelihood strategy, 2003*

Strategies	*SA*	*IN*	*S/D*	*MS*	*CI*	*LI*
Accumulation	0.154	0.000	-0.154	-0.077	0.000	0.231
Consolidation	0.484	0.065	0.258	0.129	0.581	0.258
Survival	0.375	0.188	0.125	0.125	0.188	0.375
Average	0.390	0.123	0.156	0.105	0.369	0.303

SA : increase in scale of business or region of operation
MS : market or subsistence orientation
IN : investment or disinvestment
CI : capital input
S/D : specialisation or diversificationLI: labor input Source: Survey data, 1998 and 2003

duction; they also showed a very slight tendency to expand market orientation and to increase the use of capital inputs and labor inputs rather strikingly. On the whole, they responded to crisis conditions in a very conservative manner, meaning that they avoided high failure risks and concentrated on low-risk activities in an intensive manner that involved as much utilization of their own labor as possible. They avoided large capital investments in an attempt to prevent greater losses because people could still see many uncertainties that could not be easily be ignored. A description of the production responses made by the different types of households according to their livelihood strategies is given in table 6.5.

Households with survival strategies

The production responses of survival households in all villages in the research areas tended to involve an expansion in business region in the context of efforts to achieve wider market reach, but they did not introduce any increase in business scale to reduce risk (SA). Investments were rarely made in the means of production and did not occur in large amounts as a consequence of the great uncertainty that prevailed in business circles (IN). This group of households actually tended to undertake diversification so as to spread risk within a portfolio of more livelihoods so that failure in one field would be compensated for by success in other fields (SD). Besides that, there was a strong tendency among this group to strengthen market orientation, especially in the case of non-farm activities undertaken by those households that had a subsistence base in agriculture (MS). Although there was a strong orientation towards diversification and market orientation, capital inputs tended to be very low (CI) whereas labor inputs were quite high (LI). This last point indicates that in the context of survival there was strong exploitation of human resources within households that did not own capital assets.

Households with consolidation strategies

The responses of this group differed somewhat from those of the other two groups in expansion in scale and business region, diversification in production, market orientation and the use of capital, which was rather high. The production responses of consolidation households in all research villages showed a tendency towards expansion in scale and business region (SA) but households did not make large investments as they anticipated a continuation of the high level of uncertainty in economic circles (IN). Nevertheless, the consolidation households tended to undertake diversification in order to reduce risk of failure in the non-diverse system of livelihoods (SD). Their behavior also tended to strengthen market orientation primarily for non-farm products (MS) through the use of high capital inputs (CI). This indicates that the behavior of consolidation households in capturing opportunities that arose at the time of crisis actually resembled accumulation behavior. In addition, the input of household labor that was made was also rather high (LI). In a normal situation, all of this is the behavior of the accumulation group, but in a crisis situation it was in fact the consolidation group of households that made rather progressive efforts. This was very probably triggered by long-term household targets that obliged them to struggle hard in facing the many uncertainties that appeared. Besides that, their life-cycle position, which was young to middle aged with many productive household members, perhaps also constituted a push towards the occurrence of this difference.

Households with accumulation strategies

The production responses of households with accumulation strategies in all of the research villages tended to be conservative, with little or no expansion in scale and business area as a response to uncertainties in the economic environment during the crisis period and the lack of pressure to go after new opportunities (SA). This was along the same lines as their decision not to make new investments in order to avoid the risk of big losses (IN). Their specific behavioral response to the crisis situation can be seen from their tendency to undertake specialization by retaining activities that they had already mastered (SD = negative). In addition, the accumulation households also tended to maintain market orientation or to reduce it slightly (MS). Their conservative behavior at the time of crisis is also apparent in the low input of capital (CI), while the rather high labor input was obtained from relatives and neighbors who needed work (LI). From this description it can be seen that accumulation households generally acted more conservatively in facing the crisis than did those in a consolidation position.

The response of non-agricultural households to the crisis

Consumption responses

In general, non-farm households showed stronger responses to the crisis than did farm households. This applies in particular to the involvement of labor. Non-farm households responded with long working hours for non-farm activities (LP). Labor from these households was specialized in the work that they had done before the crisis (ES). Specialization in farm households was directed towards meeting subsistence needs (IM = negative), whereas in non-farm households it was undertaken in the context of maximising income (IM = positive) (see table 6.6).

Non-farm households usually experienced a sharper drop in assets than did farm households and the crisis was more damaging to the livelihood systems of non-farm than farm households (SI = negative). Non-farm economic activities were obviously more affected by the spin-off. In meeting their daily needs, the two groups displayed contrasting differences. It would seem that non-farm households were more capable of giving financial loans (LB = positive) than were farm households. Even so, this does not mean that rural diversification through non-farm employment is able to increase the resilience of the household economy. Rather, it appears to be caused more by the existence of a wish to assist neighbors who are in need. At the same time it reflects the fact that there is a relatively more flexible supply of ready cash in non-farm than in farm households. The non-agricultural activities that are conducted by non-farm households at any time involve the use of cash for transactions. Hence there were greater opportunities for these households to lend out money.

The consumption responses that very clearly differentiated non-farm from farm households were those related to expenditure for consumption purposes (CE). Non-farm households were still able to maintain consumption, even though prices underwent an increase to the point where their expenditure rose. The high level of economic resilience of certain types of non-farm household enabled them to maintain the quality of life of their members through fulfillment of their consumption needs.

Table 6.6 *Scores for consumption responses by type of household, 2003*

Type of household	*LP*	*ES*	*IM*	*SI*	*LB*	*CE*
Farm households	0.067	0.267	-0.067	0.067	0.133	0.133
Non-farm households	0.311	0.111	0.089	-0.044	0.244	0.422
Total households	0.283	0.133	0.050	0.000	0.217	0.367

For an explanation of notation in the table, see table 6.4
Source: Survey data, 1998 and 2003

Table 6.7 *Scores for production responses by type of household, 2003*

Type of household	*SA*	*IN*	*SD*	*MS*	*CI*	*LI*
Farm households	0.200	0.067	0.267	-0.133	0.467	0.400
Non-farm households	0.444	0.044	0.111	0.200	0.267	0.222
Total households	0.400	0.083	0.133	0.117	0.333	0.283

For an explanation of notation in the table, see table 6.5
Source: Survey data, 1998 and 2003

Production responses

Expansion in marketing region or scale of operations has a higher positive value for non-farm than for farm households (SA). The reason is that the characteristics of non-farm work frequently require interaction with other regions. This interaction does not occur in the case of farm households because their activities are local and immobile in nature. There was no striking difference in level of investment between the two groups of households, the figures being positive but not too large (IN) (see table 6.7).

While non-farm households undertook specialization in their work, farm households undertook diversification in the types of commodities that they produced in order to reduce risk. Farm households tended to be oriented towards the fulfillment of subsistence needs (MS = negative), whereas non-farm households tended towards commercialization (MS = positive). The difference in the responses of the two groups of households to the crisis is seen clearly from expansion in capital and labor inputs (CI and LI). The farm households had a greater wish to undertake investment in every field than did non-farm households. The latter tended to be more cautious in making investments because of the presence of uncertainties in the business world. Meanwhile, farm households undertook investment and agricultural diversification so as to maintain their subsistence requirements and food sufficiency.

A distinction can be made between two manners or modes of operation in non-farm activities, namely, those modes that are activity-based and those that are establishment-based. An analysis, in which all farm households were omitted, was made of all non-farm households. Hence the relationship between the mode of operation and both consumption and production responses and the production modes of non-farm activities could be explored more accurately.

Consumption responses and modes of operation in non-agricultural work

On the whole, non-farm households that are establishment-based tend to mobilize labor in a way that does not differ from that of activity-based, non-farm households (LP). Nevertheless, establishment-based,

Table 6.8 *Consumption responses by basis of non-agricultural production, 2003*

Production basis	*LP*	*ES*	*IM*	*SI*	*LB*	*CE*
Activity-based	0.28	0.04	0.12	0.04	0.28	0.36
Establishment-based	0.28	0.16	0.04	-0.08	0.20	0.44

For an explanation of notation in the table, see table 6.4
Source: Survey data, 1998 and 2003

non-farm households can manage their assets freely in the business units concerned. On the other hand, the activities of non-farm households do not allow much space for the individual actors to make decisions about the allocation of resources. Decision-making is done by leaders who make decisions for non-agricultural workers within the establishment in a centralistic manner. The majority of activity-based, non-farm households operating in services and trade have many independent workers (table 6.8). Thus their productivity is not greatly influenced by additional labor.

Non-farm, establishment-based households acted rather conservatively in diversifying, whereas those that were activity-based carried out specialization by concentrating on the non-agricultural activities that they had usually undertaken (ES). The latter were more oriented towards income maximization, whereas establishment-based households adopted an attitude that approached a non-response (IM). In order to obtain a large profit (income maximization), establishment-based, non-farm households must commence with a rather large investment, and so their low profit in a time of crisis constitutes their main excuse for low investment.

Among activity-based non-farm households, savings still experienced a slight increase by comparison with the situation in establishment-based non-farm households (SI). During the crisis the former were more fortunate than the latter because their services were more in demand than the goods produced by establishment-based households. As it turned out, attempts among establishment-based households to save their businesses absorbed significant expenditure, which caused a drop in their savings. Among activity-based households, matters of this kind were not the responsibility of the individual, which meant that for this type of household the fall in savings was not as bad as it was among establishment-based households.

It would seem that the two groups of non-farm households continued to have an important role as sources that could lend money to other people in the village. The presence of a positive index (LB) indicates that the giving of credit was an intrinsic part of their activities in trade and the rental of rooms and houses as well as in retail activities and other services. Hence the non-farm households were still able to withstand

Table 6.9 *Production reponses by basis of non-agricultural production, 2003*

Production basis	*SA*	*IN*	*SD*	*MS*	*CI*	*LI*
Activity-based	0.52	0.24	0.04	0.28	0.08	0.20
Establishment-based	0.36	-0.08	0.16	0.04	0.48	0.32

For an explanation of the notation in the table, see table 6.5
Source: Survey data, 1998 and 2003

the upheaval of the crisis. For that reason it is not surprising that these two groups of non-farm households experienced a similar pattern in expenditure on consumption (CE).

Production responses and modes of operation in non-agricultural work

With the exception of non-farm households in Maguwoharjo, establishment-based non-farm households adopted a somewhat conservative attitude in increasing the scale of their operations and the scale of their business region, whereas activity-based non-farm households displayed striking efforts to expand their business region (SA). This is in accord with the previous explanation that activity-based households concentrated on existing work, while establishment-based households tended not to make investments during the crisis period (IN) (see Table 6.9).

The variety of businesses conducted by establishment-based households tended towards stagnation without any attempt towards diversification, while activity-based households ranged between specialization and diversification (SD). Establishment-based households found it harder to make changes because the capital that they had already invested would be useless if they undertook diversification in subsectors far from what they were currently doing. The difficulty of forming a large amount of new capital also hindered diversification efforts on the part of establishment-based non-farm households (IN).

The production orientation of establishment-based non-farm households tended to be directed a little more towards the market (MS) but did not differ significantly from the response of activity-based households. The non-agricultural activities that have remained land-production-based from the crisis up to the present time are time-tested, non-farm undertakings for which it is difficult to find new markets or new locations. The response to the use of capital inputs tended to be stronger among establishment-based households than among activity-based households. It appears that the commercial orientation of establishment-based households was accompanied by the use of existing capital goods (CI). By contrast, labor input tended to be greater among activity-based households in accordance with the nature of their services (LI).

Conclusion

Variations in the livelihood situation of rural households in DIY were still determined by their agroeconomic setting. In a crisis situation one system of resource use proved more flexible than other systems and hence the responses that were produced also varied at the household level. Households that had the protection of sufficient assets tended to be able to maintain and even undertake accumulation when the opportunity was available, although there was a tendency for accumulation households also to act rather conservatively. Consolidation households, however, were more aggressive in responding to crisis conditions because they had long-term needs and targets that had to be protected from the crisis.

Similarly, there were significant differences in response among agroecological zones. Villages with commercial agriculture had a tendency to respond positively to crisis-induced changes. The increase in prices for agricultural commodities obviously brought more income to villages with commercial farming. For that reason, in villages of this kind there were still opportunities for the promotion of livelihood conditions. Urban villages and subsistence-agriculture villages experienced the opposite trend in their responses. The open economic system that prevailed in the city caused many households in urban villages to experience stagnation and degradation. Similarly, the subsistence nature of subsistence-agriculture villages became stronger, as is shown by the number of households that underwent stagnation and degradation in their livelihood situation. Meanwhile, in these two types of village promotion in the livelihood situation was rarely found.

Non-farm households tended to respond in a better way to the crisis than did farm households because they had a more flexible and varied economic basis. The former gave their full attention to the economic activities that they had already mastered, whereas the latter undertook diversification to protect their subsistence needs. Establishment-based non-farm households had greater flexibility in the reallocation of resources to make changes in their businesses, but they did not have the flexibility to undertake diversification because the fact that much of their capital had already been invested in certain types of production was a constraint on diversification. On the other hand, activity-based non-farm households typically focused on the non-agricultural undertakings that they had previously been doing. Meanwhile, efforts towards diversification outside non-farm activities do not appear to have been significant.

Annex

Description of household characteristics in five villages by livelihood condition and strategy, 1998-2003

Variable	*Survival Households*	*Consolidation Households*	*Accumulation Households*
Assets	1. Land holdings are too small or they are landless, so there is no possibility of investment or expansion 2. Have no savings but may own small livestock 3. Balance between number of productive and non-productive household members is not advantageous 4. Transport for family mobility consists of bicycles, old motorcycles or motorized and non-motorized public transport 5. Rarely own goods for secondary and tertiary needs	1. Land sufficient to meet only subsistence needs 2. Savings in the form of large livestock or money, sometimes in the bank 3. Balance between number of productive and non-productive household members is sufficiently advantageous 4. Transport for family mobility consists of good-quality motorcycles and public transport 5. Own sufficient goods for secondary and tertiary needs	1. More than enough to meet subsistence needs 2. Savings in the form of money in the bank 3. Balance between number of productive and non-productive household members shows no pattern but the household can employ other people for both production and domestic needs 4. Private transport vehicles, sometimes more than one 5. Own many goods for secondary and tertiary needs
Activities	1. Employment as farm laborers or tenant cultivators combined with inferior non-farm work of low social status 2. Very high pressure on productive labor, often leading to extreme occupational multiplicity involving many activities that are not very productive	1. Subsistence farm undertakings as main or part-time activity combined with non-farm work of medium social status 2. Rather low pressure on productive labor, occupational multiplicity still occurs with sufficiently productive non-farm activities	1. Above-subsistence farm activities as a part-time activity combined with non-farm activities of high social status 2. Low pressure on productive labor; occupational multiplicity occurs with very productive non-farm activities as a means of accumulation
Capabilities	1. Difficulty in meeting primary needs like food, clothing, and proper housing 2. Consumption expenditure held	1. Primary needs like foodstuffs, clothing, and housing already met adequately 2. Involved in debt for activities of a consolidation nature	1. Primary needs easily met, clothing and housing more than adequate 2. Involved in debt with official financial

Variable	*Survival Households*	*Consolidation Households*	*Accumulation Households*
	down by restricting themselves 3. Often involved in chronic debt for primary needs 4. High dependency on social networks to meet financial demands for certain urgent necessities 5. Low consumption of electricity, low expenditure on health and education with orientation towards obtaining local services	or small-scale investment 3. Minimum dependency on social networks to meet financial demands for certain urgent necessities 4. Fairly high consumption of electricity, relatively high expenditure on health and education with orientation towards obtaining regional services	institutions for investment purposes 3. Have an important role as benefactors in difficulties in the surrounding social network 4. Very high consumption of electricity, very high expenditure on health and education with orientation towards obtaining regional-national services
Strategy characteristics	1. Meeting household needs in selective, conservative, and minimum ways 2. Obtaining subsistence income on the principle of caution through extreme diversification 3. Mobilizing all human household resources to achieve short-term objectives	1. Meeting all household needs selectively in keeping with long-term objectives 2. Obtaining income to attain long-term household objectives and able to take a little risk 3. Mobilizing household resources in a selective and optimum way in sectors that clearly offer good long-term prospects	1. Meeting all household needs, almost without exception 2. Obtaining income to achieve long-term objectives by taking risks 3. Mobilizing household resources especially in the form of capital, but employing labor from outside the household

Source: Generalization of household survey data, 1998 and 2003

Note

1 The collapse of the Brosot bridge was really the cumulative effect of the crisis and regional autonomy, which occurred at the same time. Exploitation of sand on the upper slopes of Mt. Merapi involved the use of heavy equipment, which had become very popular since regional autonomy was introduced; this meant that the quantities of sand that were washed down and could be removed on the lowlands became increasingly smaller. At the time of the crisis, sand excavators needed more sand in order to meet their needs. The consequence was that sand was excavated close to the foundations of the bridge, a section of which later collapsed. The revenue collected from sand excavation was only Rp 300-400 million per year, but the cost of reconstructing the bridge was estimated at around Rp 4 billion. So far the damage done to the bridge has not been repaired.

7 The Effects of the Crisis on Livelihood Systems in "Rurban" Areas: Case Studies in the Special Region of the Yogyakarta

Djarot S. Widyatmoko

Introduction

In the middle of 1997 an economic crisis swept over most of the countries in the Asian region. The crisis was triggered by a weakening of the currencies of these countries to the US dollar. For Indonesia, the impact of the crisis was far worse than it was for other Asian countries (Sunderlin 2001). Although a restoration of the situation became apparent in the middle of 1999 (when economic growth started to move slowly upwards while inflation was held down), a return to the pre-crisis situation was still far from expectations. Quite a number of studies have been made of the behavior of the economic crisis in Indonesia and its impact on economic, social, and political dynamics at various scales of observation, both national and regional and also local. The general conclusion that can be drawn from these studies is that the economic crisis caused the level of poverty (both absolute and relative) to rise, and large-scale unemployment, high inflation (which led to a fall in the purchasing power of the community) and sociopolitical unrest and tension to increase. The most obvious consequence of the crisis was the fall of the "New Order" regime of President Suharto in May 1998 and the beginning of government decentralization with the introduction of regional autonomy in 1999.

On the whole, most of the studies concerning the economic crisis have been carried out in urban areas and have looked at its impact on the lives of urban communities. The reason is that many economists believe that the economic crisis, as it occurred in Indonesia, represented a part of the dynamics of economic globalization, which gave urban areas (especially the large cities) the function of links in the global flow of commodities and funds. Economic globalization (in its present meaning) was triggered by the 1974 oil crisis, which caused industries that were controlled by multinational corporations (MNCs) in developed countries to become inefficient and to experience losses because of very high production costs. This was followed by a flow of industrial and financial resources from developed countries to certain developing coun-

tries as an extension of the hands of MNCs abroad. Indonesia, as a developing country, was no exception. As an oil-producing country, Indonesia indeed obtained advantages from the oil crisis, a fact that also encouraged Indonesia to become more open to the penetration of foreign capital. Throughout most of the 1970s and 1980s Indonesia imported a lot of capital goods and allocated a large part of the money obtained from the sale of oil to the expansion of urban infrastructure as part of the attempt to attract foreign capital. For this reason it is to be expected that Indonesia's high economic growth in the pre-crisis period consisted of growth in urban areas (primarily in the country's large cities). It also meant that the consequences of the economic crisis were undoubtedly worse in urban areas. Apart from this, the economic crisis in urban areas can also be traced to the urban-biased policies of the New Order government. This bias can be seen from the size of the government's development and routine budgets, which gave more attention to the economic development of urban than of rural areas. In particular, the large cities that were centers of industrial development and financial services were favored.

Unlike most studies, this article focuses more on the influence or impact of the economic crisis on livelihood systems in "rurban" areas, that is, rural areas that are currently undergoing the process of urbanization. More specifically, in these areas a mixture of urban and rural livelihoods is taking place. Because of their position as transitional areas between the city and the village, they are more vulnerable to the effects of an economic crisis than are rural areas. The reasons for the selection of "rurban" areas as research locations lies not only in the fact that very little reasearch has been undertaken in such areas but also in the fact that the present article constitutes one part of a much wider PhD study of the impact of the crisis on rural resource use and livelihoods in Indonesia.

As is generally recognized, each community group has had a different experience of and response to the economic crisis. This difference seems to be primarily linked to the system of resource use and the livelihood system (Titus 2003). For example, farmers and non-farmers (those engaged in trade, household industry and similar occupations) will respond to a crisis in different ways and according to different patterns. Even within a community of farmers there are differences, depending on the type of land use (for example, between growers of irrigated rice and those who cultivate non-irrigated land). These differences can be caused by differences in the inputs that are needed, market orientation, price mechanisms and the like. The extent to which a community or a household in a "rurban" area is able to overcome the crisis that it experiences would appear to be influenced not only by the character of its system of resource use but also by social aspects that influence access to and allocation of the necessary resources. The role of in-

stitutions, for example, represents a social aspect that is often regarded as exerting great influence on the level of community access to land, employment, income and the like.

Research settings

Within this framework of analysis, settlements can be divided into three types, those in urban areas, those in "rurban" areas, and those in rural areas. Since the present study concerns livelihood systems and household responses to the effects of the crisis in "rurban" areas, four villages have been chosen that are representing different subtypes within the urban category. The "rurban" corridor is represented by Maguwoharjo village and the interior "rurban" by three villages, each of which has certain characteristics, namely, Trimurti (a center of household industry), Temonkulon (a subdistrict capital where irrigated rice cultivation is predominant), and Ponjong (a subdistrict capital where dry farming or dryfield cultivation dominates). Peri-urban areas are not included because these areas already have the characteristics of urban areas. The spatial location of these four villages can be seen from figure 7.1, which is followed by a brief description of each village.

Maguwoharjo village

The village of Maguwoharjo is situated in Depok Subdistrict in the District of Sleman. On the whole, most of the topography is flat but one section consists of a river valley (as usual, the position of this area is lower). This village, which lies approximately eight kilometers to the northeast of the center of the city of Yogyakarta, is closer to the city than the other three sample villages. As it is the closest to the city of the four villages, urban influences have been felt very strongly here, especially

Figure 7.1 *The location of the research area*

since the North Ring Road (*Jalan Lingkar Utara*) began to function in the early 1990s. The North Ring Road has been the lubricant that has hastened the process of suburbanization in the village, especially in the central and northern parts, which had previously remained barely touched. Agricultural land (in particular irrigated land and dry fields), which made up the general scenery before the 1990s, is now gradually being replaced by buildings (private houses, houses-*cum*-offices, and general housing complexes), offices (education, government, and so on) and public facilities. Even medium-scale factories can be found here. This last development reveals that the land to left and right along the North Ring Road has changed into a complex of shops that resemble the development along the Solo Road.

Changes have occurred not only in the physical appearance of land but also in the people. Today it is common to meet newcomers from outside the village. Some have settled here permanently while others are living here only temporarily (on the whole the latter are students from other regions). Their activities are generally urban-based and so the connection with Yogyakarta City is more intensive than in the previous period. The presence of these newcomers has also exerted influence on the original people of the village. An increasing number of original residents no longer depends on agricultural activities for their living. They prefer to go in for trade, to rent out houses or rooms to students, to work as employees in shops (hotels and restaurants), and even to work as unskilled construction laborers (because the frequency of house construction in this village is high).

Trimurti village

Trimurti village is the capital of Srandakan Subdistrict in the District of Bantul. It is situated in the southern part of the research area, approximately 20 kilometers south of the city of Yogyakarta. The village also plays a role as the gateway for traffic between Bantul District and Kulonprogo District in the south. Hence it is a very busy place: there is heavy traffic in goods and people from before sunrise until late at night. Since the Kaliprogo Bridge was damaged four years ago, the flow of traffic has been somewhat less; there are no signs of the bridge being repaired.

As a village on the side of a large river estuary (the Kali Progo), Trimurti is relatively flat, having a slope of less than 8 percent. The soil consists of alluvial materials. Nevertheless, it is not an agricultural area, even though the physical condition of the land would enable it to be used for farming. Only a very small proportion of village residents earns a livelihood from farming; agricultural land is very limited and most is now used for housing and household industries. One of the

most striking features of the village is the high proportion of village residents who are involved in household industries. The best known is the making of *tahu* (bean curd). There are, however, many other household industries in the village such as the production of food, brooms and even furniture (cupboards, chairs, and the like). Management is generally of the traditional kind; production is small-scale and usually involves only family members. Other forms of work that are fairly dominant in the village are trade and employment as laborers.

Temonkulon village

Temonkulon is one of the 15 villages that make up Temon Subdistrict in the District of Temon; Temonkulon is the subdistrict capital. It is situated in the western part of the research area, 20 kilometers to the southwest of the town of Wates (the district capital) or 45 kilometers from the city of Yogyakarta. The physiography of the village is that of an alluvial plain and on the whole the topography is flat (especially in the southern part). The small remaining part, especially in the northern part of the village, is somewhat undulating, with a slope between 8 and 15 percent. With alluvial soil and an annual rainfall of 2000 to 2250 millimeters, the village is very much suited to a system of wet agriculture or an irrigated rice-field system.

Most of the people of Temonkulon village are engaged in agriculture as farmers (owners or tenants) or as agricutural laborers. The physical conditions of the area, which enable irrigation to be used intensively, have made this village a significant producer of rice. Where land cannot be irrigated, dry fields that are planted with a variety of crops such as bananas, cassava, and coconuts have generally been developed. Most of these products are sold; only a small part is consumed by the household itself. Agricultural production in this village would also appear to have encouraged post-harvest undertakings. This is apparent in the engagement of a number of households in the hulling of rice and soybeans.

Because of its position as a subdistrict capital, Temonkulon has fairly complete service and trade facilities. There is a rather large community health center (*puskesmas*) that is capable of providing health services for the area. Similarly, there are complete educational facilities from kindergarten level to senior high school as well as banks, telephone kiosks, and other such things. The expansion in telephone kiosks is worth examining as it shows that contact between the village and other places is quite intense. The results of field observations indicate that numbers of village people have migrated elsewhere in search of work. Besides that, the presence of public facilities also represents a source of livelihood outside agriculture (more than one-third of the people of Temonkulon village work outside the agricultural sector).

Ponjong village

Like two of the other research villages, Ponjong is also a subdistrict capital, in this case the capital of Ponjong Subdistrict in the District of Gunung Kidul. The village is located in the eastern part of the research area, about 45 kilometers from the city of Yogyakarta. It is a hilly area, with slopes between 8 and 40 percent. As a part of the Gunung Sewu series of hills, the soil in this village is Terra Rossa, which has developed from the parent material of limestone. In color, soils range from red to yellow. In the wet season these soils become extremely sticky, while in the dry season they crack extensively, which means that many types of crops are unsuitable for this village. The general land type found in the village consists of dry fields (*tegalan*), which are planted with various kinds of crops. Unlike other karst areas, Ponjong village has a significant stretch of wet-rice fields (*sawah*). The reason is the presence of a spring that originates in an underground stream and gushes up with a reasonably strong flow throughout the year. The local people have constructed ponds to store the water, which is used to irrigate *sawah* and for daily needs.

The shortage of irrigated land and the fact that some land is unsuited to agriculture, together with the low access of the village to the city has caused many people to migrate elsewhere or to look for work outside the agricultural sector. Field observations show that many household members have tried their luck in Jakarta and put aside a part of their earnings to send back to the village. In addition, there are many people who are engaged in trade or who work as laborers. Some even do domestic work.

As a subdistrict capital, Ponjong has fairly adequate facilities and infrastructure. There are roads that link the village with other subdistrict capitals and with the district capital, and transportation in the form of minibuses and *ojek* (motorcycles that carry passengers) and other vehicles are also available. Other facilities, like schooling from kindergarten to senior high school, a community health center and even a doctor's private practice, can be found in the village. The existing market is quite busy, especially from early morning until midday, and several shops and kiosks have appeared along the main road of the village. All of these things indicate that the process of urbanization has commenced in this village.

The effects of the crisis

The discussion of the impact of the crisis on livelihood systems in this article is divided into two sections. The first section discusses the gener-

al impact that occurred in all the research villages, while the second section looks at more specific effects in certain villages. This second section really offers evidence indicating that livelihood systems and household (and regional) resource systems had significant influence on household responses to the occurrence of the crisis.

The general impact

At the time when this study was carried out, the crisis had already entered its fifth year (the end of 2002), which meant that a number of events had taken place during the preceding period. Even so, it can be said that in general the crisis began to be felt in the "rurban" area after the first six months (around the beginning of 1998), at a time when factory-made consumer goods started to disappear from the market and were hard to obtain. In addition, the prices of these goods were very unstable (rising and falling very quickly) due to the instability of the exchange rate of the rupiah against the US dollar. At that time there was outstanding "panic and unrest" within the community. Economic activities seemed to come to a halt and people did not know what to do. Many shops and stalls (*warung*) ceased operating, probably for two reasons: first, the owners put off buying manufactured goods until prices stabilized, and second, they closed down or became bankrupt, especially those shops and stalls that depended largely on manufactured and imported goods because these goods were scarce or else prices had become "crazy".

Besides that, the consequences of employment severance (PHK), which had taken place in urban areas, had started to appear in the research area, although the nature and severity differed somewhat in the various research villages. In Maguwoharjo, for example, unemployment due to PHK was caused more by delays in housing construction (by both developers and private owners) and in other service sectors (like shops and other service companies that no longer operated) that were located in or close to this village. Unemployment due to PHK in the other three research villages (Trimurti, Ponjong and Temonkulon) represented the "spin-off" from the dismissal of workers in big cities (mainly Jakarta). The direct impact on the communities in the research villages was reflected in two things. First, there was a change in consumption patterns and a rather drastic fall in the quality of people's diets. The price rises and scarcity of factory-made consumer goods (especially imported items), which were then followed by a sky-high rise in the prices of the nine basic necessities (*sembako*), caused the community to cease (or reduce) consumption of manufactured goods (such as electronic goods and the like) for secondary purposes "temporarily"; in cases where such goods were urgently needed, people preferred to use

locally manufactured products. The same was true in meeting the need for basic commodities. Second, there was an increase in criminal actions such as theft and looting in all the research villages. Inability to meet the daily needs of life led unfortunate sections of the community (in particular, young, productive people who had lost their source of income) to take short cuts of a negative kind.

This unstable situation continued for the next six months, together with the political instability that ended with the "fall" of the New Order government led by President Suharto (and obviously that of President B.J. Habibie). After a new president (President Abdurrahman Wahid) was elected, a new chapter began in the government of Indonesia. The development policies of the new government in the monetary and other fields succeeded in controlling stability in many sectors. Nevertheless, at that time the purchasing power of the community had really reached its lowest point: the prices of consumer goods (both manufactured and non-manufactured) and of services doubled, while sources of household income remained the same or even decreased among certain segments of the community (such as rice-growing farmers as a consequence of the removal of subsidies for agricultural inputs). Two government policies (related to the crisis) were introduced that had a direct impact on community life in the research area, namely, the social safety net (JPS) programs and the removal of subsidies, in particular the subsidy for fuel (energy) and the subsidy for agricultural inputs. These two policies had very contradictory effects. Leaving aside the many forms of misuse that occurred, the JPS programs on the one hand helped the poorer groups in the community with education, health care and the provision of cheap rice (which is better known as *raskin*, meaning "rice for the poor"), yet on the other hand the removal of the subsidies for fuel and agricultural inputs pushed the costs of production up.

Together with greater stability in national, macro-level economic conditions (at a time that was also marked by the transfer of government authority from the hands of Abdurrahman Wahid to Megawati Soekarnoputri), the atmosphere of "uncertainty" began to fade. The wheels of the economy began to turn again, economic growth took place and inflation was held down, added to which the beginnings of social security were created. Thus it can be concluded that a situation of "shock and stress" had indeed occurred in the "rurban" area of the Special Region of Yogyakarta, but had prevailed from the beginning of the crisis for the following two years. After that, the majority of people no longer regarded the situation as a crisis (that led to panic and unrest) and soon returned to their customary pattern of life "like now". The pattern "like now" to which they referred is a life characterized by high costs traceable to the rise in the prices of basic necessities, which more than doubled by comparison with the pre-crisis period, and to the high cost

of inputs and the growth in laborers' wages. The rise in the cost of laborers' wages forced household industries that were not too large to utilize more household labor. For example, children helped with the production process while wives sold goods at local markets.

The local impact

Maguwoharjo village

The crisis actually constituted the trigger that encouraged people to utilize "local resources" to increase their sources of income by selling part of their agricultural land and their home lot. Field observations indicate that almost all agricultural land originally owned by local people had changed hands to new dwellers and institutions. In this village (and surrounding villages) there are more than three rather large universities and a number of senior high schools, both general and vocational. Besides that, its strategic location, excellent access to the city center and competitive land prices have made this area the main target for both housing developers and wealthy individuals (many of whom came from places outside the city of Yogyakarta). Already two "elite" housing complexes (Taman Cemara I and II, which together contain more than 100 house units) have been constructed in the village, and one more is now being built (it would appear to be rather large, with 200 units including house-shop (*ruko*) buildings).

The people of Pugeran hamlet generally have several alternatives to add to their income from the sale of land and the construction of houses: first, they can build additional rooms or new houses for rental. People who do not own a wide home lot usually choose to expand the main house by adding on a number of rooms (usually between four and ten); however, those with a large home lot prefer to build new houses. Second, another alternative is to open a small restaurant or a general store. These *warung* are usually part of the main house or, if separate, are at least on the same house-lot. Third, there is the provision of consumer services like laundries, barber shops, and beauty salons. Fourth, there is trade in building materials. The number of families involved in small businesses is not great, however, possibly because relatively large capital is needed for such undertakings. Finally, there is the construction sector which offered work to small "contractors", artisans, or building laborers.

The number of households involved in occupational multiplicity is significant. The combination of a basic job and the renting out of rooms or houses is the most commonly encountered pattern of sources of household income, besides a basic job and a *warung* (a small restaurant or general store). There are many multi-spatial households in this village. For example, the household head works as a public transport

driver, the wife is a vendor in the market and an adult child runs a *warung* in the family house. Household patterns of this kind require further study.

Trimurti village

One striking feature of this village is that it has no agricultural land. Indeed, it has been well known for many years as one of the centers of the *tahu* industry in Bantul District. Many households have long been engaged in this industry and the number has increased since the crisis. Interviews with local people and observations in the field suggest that there are at least two reasons for the increase in the number of households involved in *tahu* production. The first is the shift in community diet back to *tahu* and *tempe* (soybean cake) since the crisis as a consequence of the sharp rise in the cost of meat and eggs, which has increased the demand for *tahu* and *tempe*. The second reason is related to the first. This is the only business activity that can be undertaken by people who have been retrenched and have returned to their place of origin. Evidence in the field indicates that most of the new *tahu* businesses are run by individuals who have returned to the village.

The present consequence of the great increase in *tahu* production is that supply now exceeds demand. Since *tahu* is a perishable product that must be sold on the day when it is made, the producers have adopted two strategies, namely, a reduction in production and expansion in their marketing regions. These two strategies appear to have been favored by two different groups. Small producers prefer to reduce production because attempting to reach markets outside the area is useless and causes losses, whereas the larger producers are happy to increase output and to widen their marketing network. Interviews showed that they sell most of their output in Beringharjo Market (Yogyakarta).

Socio-community institutions have played a very significant role since the crisis, especially informal institutions at the hamlet level such as the Neighborhood Association (*Rukun Tetangga* or RT) and family ties. One example is the *arisan*, or rotating credit group common within the RT, which has proved very effective in overcoming the socioeconomic problems faced by its members. If a member of the household falls ill, it is this institution that is first asked for assistance.

The social safety net programs also appear to have produced significant benefits, especially the rice assistance or *raskin* program and the health assistance program (better known as the "health card" program). The *raskin* program greatly helped as it sold rice below the market price. Whereas the market price was between Rp 2,500 and Rp 3,000 per kilogram, the *raskin* price was only Rp 1,000 per kilogram. This program, however, was intended only for the poor (or the very poorest) and each family received only 10 kilograms of rice per month.

Temonkulon village

Field observations show that the land that comprises the home lot plays an important role in the household economy at the present time (especially for the "survival" group) where the availability of "cash-money" is very limited due to the crisis. The economic function of the home lot has two aspects in that it provides items for the daily diet and it is also a form of savings for sudden, unanticipated needs (such as illness and contributions to kampong celebrations) and long-term necessities (such as the education of children, children's wedding celebrations, and the celebration of major religious days). In the first case products usually take the form of vegetables and tubers, while in the second case they are generally commercial commodities like coconuts, cocoa, and bananas or else livestock like goats or cattle. In recent times people have preferred to raise goats rather than cattle because cattle prices are currently very low (possibly because imported beef, mainly from Australia, has flooded the market).

The high cost of living that has resulted from the doubling of the prices of basic necessities by comparison with pre-crisis prices, from the high cost of agricultural inputs because of reductions in farm subsidies and from the increase in agricultural laborers' wages, which have almost doubled, have caused households to fall into a worse abyss of poverty. Meanwhile, the thing that hurts them even more is the low selling prices offered for their agricultural products (especially rice) in the market. Their dependence on middlemen from the city is greater at the present time than it was before the crisis, when more transactions took place at the farm gate than in the market. This is due to a number of things, such as the large increases in transportation costs, which are not commensurate with the increase in the selling prices of their products, the fact that the proportion of their yield that is sold is smaller than before the crisis, to the point where there is a trend towards a return to a subsistence pattern, and finally, the fact that market prices do not differ very much from farm gate prices. At the time of the main harvest the prices of agricultural products fall and for this reason farmers prefer to store their crops and sell them later when they need cash.

As an area from which workers used to depart, this village has obviously accepted back people who lost their jobs, especially in Jakarta and its surroundings. Since most of these people were employed in the formal sector (as factory workers) and since the social networks in the informal sector in this village are limited, many of them have chosen to remain in the village. On the whole they have undertaken two activities, namely, opening a *warung* and renting agricultural land (especially *sawah*). This has undoubtedly in itself formed a burden for the village.

Like in Trimurti, local social institutions have played an important role in coping with the crisis; not only in cases of death and illness, but also for getting assistance in purchasing agricultural inputs.

Ponjong village

Geographical factors appear to have had a significant influence on the people of this village during the crisis and up to the present time. These factors include the long distance of the village from the city of Yogyakarta, the rough topography of the area, and the dependence of the production process on the climate. These factors, together with the crisis, caused three basic problems which the people of Ponjong are in the midst of facing, namely, the doubling of the prices of basic necessities (in fact, of virtually all goods) by comparison with pre-crisis prices, the increase in the cost of transportation (because the cost of fuel and spare parts for vehicles also rose, while the topography is difficult and the village is located a long way from Yogyakarta City), and agricultural yields are now uncertain (the prices of agricultural inputs like fertilizer, seed, and pesticide have risen sharply and climatic patterns are unpredictable).

At the beginning of the crisis, that is, one or two years after it started, many village people "returned home" because of dismissal from employment, which created problems. One problem was social unrest such as theft of wood from the forest and the occupation of state land. These disturbances have now declined, however, and many of those who returned to the village have gone back to the city, utilising existing social networks. The people of Gunung Kidul are well known for their urban social networks, especially among people involved in the informal sector.

As in other places, urban-related village activities (primarily for secondary needs) experienced a decline and in many cases ceased. An example from this village is the household furniture industry, which no longer exists. A different situation is found with agro-industrial activities, for example, the corn-crisps industry. It would seem that there has been rapid growth in the output of this industry since the crisis. This development is closely related to the general change that has occurred in community eating patterns, for people now purchase secondary food products that are cheaper and hence more affordable.

Again local social institutions have played a very significant role since the crisis, for example, both at the hamlet level such as the Neighborhood Association (*Rukun Tetangga* or RT) and through family ties. If a member experiences some difficulty such as illness, crop failure, or house construction, well-established informal social systems begin to function. It is interesting to examine the following example. One consequence of the crisis that affected small farmers has been the nominal rise in agricultural wages, which have almost doubled. This increase has been a heavy burden because the value of farm output has barely

changed (and has even undergone falls at harvest time). So what have small farmers done? They have formed groups of around five to ten people who work on the dry fields of each group member in turn without any form of payment. This approach has proved quite effective because their holdings are not too large (less than one hectare).

The Impact of the crisis on household livelihood systems

The distribution of households in the research area by type of livelihood system (accumulation, consolidation and survival households) is shown in table 7.1. Household livelihood systems in "rurban" areas are determined through evaluation of three major aspects, namely, the household's capabilities, its assets and its activities. Capabilities concern the pattern of resource use while assets are linked to ownership of and access to resources; activities are evaluated from the type and status of each household member's occupation. These three major aspects are then expressed as seven criteria that are divided into 15 variables. Details of how this has been calculated for each of the research villages can be seen in appendix 1. From the analysis of in-depth interviews with sample households, only 20 percent are classed as accumulation households, 42 percent are consolidation households, and the remaining 38 percent are survival households.

The following discussion gives an in-depth explanation of the results of the analysis of livelihood systems in each of the research villages. This approach has been adopted because the composition and nature of the systems in each village show specific characteristics.

General responses to the crisis

Based on the classification of livelihood systems, household responses to the crisis reveal variations. In the present article the responses that are examined are divided into two types, consumption responses and

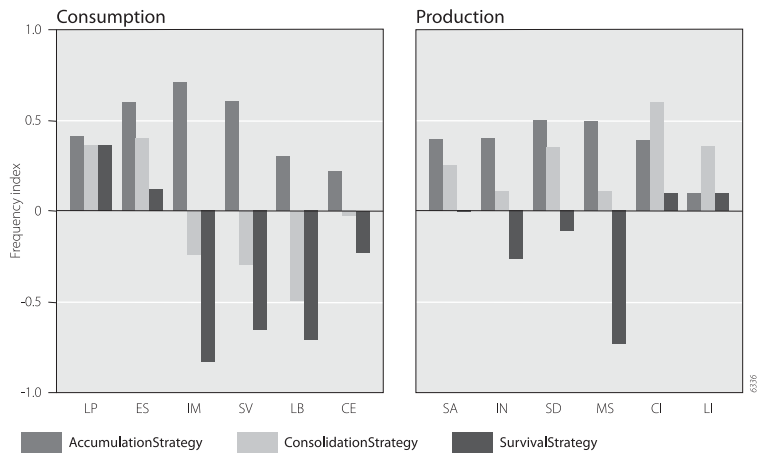
Table 7.1 *Distribution of sample households by village and type of livelihood systems at the time of research (end of 2002)*

	Accumulation	*Consolidation*	*Survival*	*Total*
Maguwoharjo	3	6	3	12
Trimurti	1	7	4	12
Temonkulon	4	3	5	12
Ponjong	2	4	6	12
Total	1	20	18	48
	(20.83 %)	(41.67 %)	(37.50 %)	(100.00 %)

production responses (see Titus 2003). Consumption responses are related to six variables, namely, labor participation (LP), specialization or diversification of undertakings within the household (ES), an increase or decrease in income sources (IM), an addition to or reduction in household savings (SV), the extent of debts (LB), and the increase or decline in the household's consumption expenditure (CE). Production responses refer to variables such as the expansion (or reduction) of productive land (SA) and investments (IN), diversification or specialization in production (SD), changes in business orientation (market orientation or a return to subsistence) (MS), the extent of capital input (CI), and labor input (LI). Further clarification of the response variables and the method of calculating them and evaluating results can be seen in appendix 2.

Household responses to crisis phenomena in all research villages for response variables are summed up in figure 7.2, where the curves on the left side represent consumption responses and those on the right indicate production responses. It is clear from the figure that both the consumption and production response patterns for all types of household livelihood system (accumulation, consolidation, and survival) show significant differences for most of the response variables. An exception occurs in the case of labor participation (LP), where all types show the same positive response (although it is not very high). This reflects the fact that on the whole the crisis encouraged more sample households in the research area to involve more household members in earning family income. Survival households utilized more household members in

Figure 7.2 *Household consumption and production responses to the crisis by strategy type*



various types of work (ES) than did accumulation and consolidation households, even though their income (IM) underwent a sharp decline during the crisis. Most of the consolidation households, although not as many as survival households, also experienced a fall in family income (indicated by values of the curve below zero). This indicates that the type of work undertaken by consolidation and survival household members in an attempt to increase household income consisted mostly of jobs that brought low or very low returns (such as agricultural wage labor, "odd-job" work, construction work, and domestic employment). Meanwhile, the opposite was the case with accumulation households; the number of household members who were employed was small but returns to labor were high.

The great skew in levels of family income between accumulation households and the other households had direct consequences for the other three consumption response variables, that is, savings (SV), debts (LB), and consumption expenditure (CE). Figure 7.2 indicates that accumulation households showed a positive response to these three variables, while on the other hand survival households had a negative response and consolidation households had a negative response for two variables (SV and LB) and a neutral response for CE. This proves that during the crisis many accumulation households were able to increase family savings (indicating that household income was higher than household expenditure), while the majority of consolidation and survival households had to "eat into" their family savings (for example, by selling some of their jewelry or livestock). Nevertheless, this does not mean that all accumulation households escaped the effects of a scarcity of "cash money" and the high cost of consumption goods and services during the crisis. The low positive responses to the variables LB and CE show that many accumulation households still required loans or else incurred debts to meet their daily needs. In other words, there were still many accumulation households that experienced a "deficit" in the household budget as a consequence of high consumption expenditure. A situation of this kind was usually encountered in accumulation households that still had the burden of educational costs for children, especially those attending senior high school or doing tertiary studies.

Turning now to production responses, three aspects warrant attention. First, accumulation and consolidation households have positive responses to the six production variables, although these responses are not very high. Survival households, however, have greater variations in their responses: there are neutral responses to land (SA), negative responses to investment (IN), type of production (SD), and business orientation (MS), and positive responses to the two last variables in figure 7.2, namely, capital input (CI) and labor input (LI). The positive response to capital input in survival households might appear to be an

anomaly, yet in reality it is not necessarily so because they had to make this input in order to maintain a living. Even to maintain production at a subsistence level, those whose agricultural land is barely big enough to live from, still had to increase their inputs, although this meant sacrificing a part of the income that they obtained from other sources. The addition of capital inputs was obviously very limited, in view of the fact that their resources were also limited. On the whole, this situation shows that among accumulation and consolidation households many were more capable of expanding their production land (SA), increasing their investment (IN) and production, and extending their marketing reach (MS) than were survival households. Secondly, the rather high negative response (-0.83) for business orientation (MS) among survival households is a strong indication that the majority of these households reverted to a subsistence pattern of life. Finally, accumulation, consolidation, and survival households all have a positive response to capital input (CI) and labor input (LI). In figure 7.2, the curve for consolidation households is higher than the curves for the other types of household, which means that the proportion of households that added or expanded capital input and labor input is greater. The positive response to these last two variables shows that to expand or maintain its life during the crisis a household had no choice other than to involve more capital and more labor in its business. This does not apply, however, to accumulation households as their use of inputs had already reached a high level before the crisis.

The local impact on livelihood systems

Maguwoharjo village

As table 7.1 has shown, half of the households that were surveyed in this village belong to the consolidation category, while of the other six households three are accumulation households and three are survival households. This composition by livelihood system is different from what it was at the beginning of the crisis (1998), when six households belonged to the survival group. This means that three of the 1998 survival households have moved up and become consolidation households (see table 7.2), which means that some of the people in a "rurban" area close to a large city actually benefited from the phenomena associated with the crisis.

Field survey findings show that the increase in status was due to three things. The first is the consolidation of the household's physical assets. As has been explained above, money from the sale of agricultural land or part of the home lot was used to create more productive sources of income, such as rooms or houses for rent, food stalls, or general stores and the like. The second is a change in occupation. This

Table 7.2 *Changes in livelihood strategies in Maguwoharjo Village, 1998 and 2003*

Family name	*LS 2003*	*LS 1998*	*Changes in livelihood systems?*	
			Due to other factors	*Due to the crisis*
Alif	accumulation	accumulation	yes (higher, career)	
Sabar	accumulation	accumulation	no	no
Suwarman	accumulation	accumulation	yes (higher, career)	
Arjonangun	consolidation	survival		yes (consolidation of physical assets)
Dulroyat	consolidation	survival		yes (change in job)
Jumino	consolidation	consolidation	Yes (lower, demography)	
Purwosuratman	consolidation	consolidation	yes (higher, demography)	
Satimin	consolidation	consolidation	no	no
Walidi	consolidation	survival		yes (income multiplicity)
Budi Prayitno	survival	survival	yes (lower, health)	
Ny. Dasiyem	survival	survival		yes (change in job)
Adijarkasi	survival	survival	no	no

is related to the first change, that is, from farming to other employment in trade or construction work (in the case of the sample households one person who had been an agricultural laborer became a vendor of mung bean porridge). The third is a multiplicity of income sources; because many opportunities were available, each household had more than one source of income.

In this study the changes in the livelihood systems that were examined were caused not only by the crisis. An examination was also made of the rise and fall of household status in one kind of livelihood system, whether it was caused by the crisis or by factors outside the crisis. The last two columns of table 7.3 show that five sample households had experienced a non-crisis change (higher or lower) during the previous five years. In general there are three reasons for these changes, namely, the status of employment, household demography (specifically the household's life cycle), and health. Changes due to employment status were generally related to an improvement in the career of the household head during the five-year period. Changes traceable to the household's life-cycle can be positive (better, increasing) or negative (worse, declining). The case of Mr. Purwosuratman is an example of positive change. Athough he had already entered pension age, the welfare of his family increased because five of his six sons and daughters already had their own families and led independent lives, while the youngest son had just graduated from university and was working in Jakarta. With the help of his wife, he established a food stall in his house yard and has been able

to adopt two foster children who are still in primary school (SD). The case of Mr. Jumino is a negative example. As a low-ranking public servant, he finds it quite difficult to pay for the education of his child, who is now approaching adulthood.

Finally, there are changes caused by the health of the head of household. The chronic illness of Mr. Budi Prayitno, for example, has prevented him from working (previously he was an agricultural laborer). Thus, family income depends on the earnings of his wife, who sells in the local market, added to which there is the rent from three of the rooms in his house. By comparison with their life before the crisis, this family has clearly experienced a somewhat drastic decline, even though they originated from the survival group of households.

A detailed description is now given of the character of each type of livelihood system in Maguwoharjo village. As already noted in the methodology section of this chapter, the criteria for evaluation of each kind of livelihood system are based on the elements of capabilities, household assets and fulfilment of needs. Accumulation households in Maguwoharjo are dominated by public servants, especially "newcomers", rather than by people who originated from this village. In addition, they generally have more than one source of income, although not always from two or more different occupations. Therefore, on the whole the accumulation group in this village has had a constantly rising level of welfare. This can be seen from their steadily increasing control of household assets in the form of goods and houses as well as money savings. Their increase in prosperity is generally not related to the crisis but has been due to a better position on the employment ladder. Interviews also showed that the very high rise in the prices of daily necessities over the past five years did not affect the consumption pattern of the accumulation group in this village.

Consolidation households represent the largest group in this village. They come from a number of occupations, ranging from self-employment (like shoe repairers, keepers of food stalls, and vehicle drivers) and low-level public servants (like security guards, night watchmen, and office messengers) to retired public servants. Most of those in the consolidation group originated from this village, but there are several households that moved here from elsewhere. Like the accumulation group, they also usually have more than one source of income but with different combinations. The Arjonangun family, for example, has at least four income sources: the first is the husband's earnings as a shoe repairer (with his own kiosk in the city of Yogyakarta); the second source is profits made by the wife, who, with the help of their children, has established a food stall and general store in the yard of their house; the third source is the rental of rooms to university students; the fourth is a household industry making crisps from the skin of livestock (*kru-*

puk rambak). This family is a good example of a multi-occupational or multi-spatial household.

The level of welfare of consolidation households is certainly not as high as that of the accumulation group. With this group, security of income is generally only moderate because of its somewhat fluctuative nature: if the family is fortunate (for example, in finding tenants for its house or rooms), income is large enough but if it is unlucky, income can drop sharply. Since the size of the income that they receive is not fixed, their level of welfare is somewhat vulnerable to change. In addition, labor participation is rather high, although it mostly involves family members rather than wage labor. From field observations it seems that the level of welfare of this group has tiers. The highest is occupied by households that no longer have the burden of educational expenses for children (as is the case with the Purwosuratman family), while on the other hand the lowest welfare tier is occupied by families that still have to pay educational costs for children, especially those who have reached senior high school or the tertiary level. This shows that the household's life cycle has a very significant influence on the level of welfare in consolidation households.

The survival households in this village are those with a single parent (a widow), a household head of advanced age, or a household head who has experienced some misfortune (such as chronic illness). Income sources for households in this group are both limited and sometimes uncertain, which makes income security very low. On the whole these households do not have significant physical assets for productive activities. Their situation is even worse if their children are still of school age.

Trimurti village

Only one of the twelve households selected as the sample for the in-depth survey is in the accumulation category, while seven are consolidation and the rest survival households (refer back to table 7.1). The small number of accumulation households points to the fact that it is difficult to expand the household-based *tahu* industry in this village. The large number of consolidation households actually confirms this statement; it would seem that there is tough competition among households engaged in the industry. Table 7.4 shows that there has been no change in the types of livelihood system over the past five years apart from changes in quality in the livelihood systems group. In the consolidation group, for example, two households have undergone a change in quality. Even so, the change has not been caused by the crisis. The Harso Suwito family experienced a drop in quality because of the high cost of medical treatment for the wife, who was seriously ill (and has now passed away), while on the other hand, the Ngatijan family experienced an increase in

quality because most of the children had already graduated from tertiary studies. In the survival group, the only change that occurred involved a fall in quality, which was related to the effects of the crisis, that is, the burden that had to be borne as a consequence of the increase in the prices of basic necessities without a comcomitant increase in sources of household income.

As in the case of Maguwoharjo village, the classification of a household in this village by livelihood system frequently ran parallel with the number of family members still attending senior high school or doing tertiary studies. As already noted, the fact that educational expenses at this level are borne entirely by the parents is a very heavy burden for the majority of families. Interviews revealed that household outlay on education had already reached more than half of their routine expenditure. In fact, at certain specific times such as the beginning of the new school year, savings in the form of cash or possessions (usually livestock like goats and cattle) had to be allocated to this purpose. A detailed description is now given of each kind of livelihood system, based on capabilities, household assets, and the fulfillment of needs.

Accumulation households in Trimurti are represented only by the Setyo Marwoto family, which is engaged in the *tahu* industry. This family illustrates the situation of a *tahu*-producing household that has achieved success (even though the number of such households in this village is very small). *Tahu* production is a very intensive undertaking in terms of the high level of labor participation, which is the reason why those households engaged in the industry have only one source of income. Although there may be other sources, they are related to the *tahu* busi-

Table 7.3 *Changes in livelihood strategies in Trimurti Village, 1998 and 2003*

Family name	*LS 2003*	*LS 1998*	*Changes in livelihood systems?*	
			Due to other factors	*Due to the crisis*
Setyo Marwoto	accumulation	accumulation	no	no
Marso Utomo	consolidation	consolidation	no	no
Lasimin	consolidation	consolidation	no	no
Harso Suwito	consolidation	consolidation	yes (lower, sick wife)	
Mujiman	consolidation	consolidation	no	no
Ngadino	consolidation	consolidation	no	no
Ngatijan	consolidation	consolidation	yes (higher, demographic factors)	
Wagiyo	consolidation	consolidation	no	no
Markuat	survival	survival	no	no
Gimin	survival	survival		yes (lower, living costs >)
Amat Mangun	survival	survival	no	no
Samijo	survival	survival		yes (lower, living costs >)

ness. The Setyo Marwoto family, for example, use their home lot to raise pigs, because the residue from the production of *tahu* provides good feed for pigs. In running his business, Mr. Setyo Marwoto involves all the members of his family, as well as eight wage laborers. The division of labor is such that the husband, children, and wage laborers are occupied in the production process, while the wife sells the finished product in markets. Since the household's output of *tahu* is rather large, it reaches not only local markets but also the Bantul market and the Beringharjo market in Yogyakarta. Nevertheless, the income security of this family is classed as medium, because income stability depends very much on the stability of the prices for the inputs and outputs required in this industry. At the beginning of the crisis, the household had to cease production because the price of soybeans (which are imported) rose sharply.

Although their level of welfare is not as high as that of the accumulation households in Maguwoharjo village, the Setyo Marwoto family is classed as prosperous in this village. Its position is further supported by the fact that the family no longer has the responsibility of educating children. Over the past five years no change occurred in the family consumption pattern but two new motorcycles can be seen in the house for family transportation purposes. In addition, there is also a color television that is less than one year old.

The seven consolidation households in this village have three kinds of primary occupation. The first is production of *tahu*, although their businesses are not as large as that owned by the Setyo Marwoto family. The second kind of occupation is the public service and the third is teaching. The two families in the last group have other additional sources of income. For example, the Lasimin family has opened a general store, which the wife and children look after, while in the case of the Ngatijan family both husband and wife are teachers in a state school. The income security of this consolidation group is lower than that of the accumulation family, even though it can still be described as adequate. As was noted above, the factor that prevents them from being placed in the accumulation category is the large consumption expenses that they still have to pay for the education of their children.

The survival households in this village are those of marginal families who do not possess household assets for productive activities. Mr. Markuat, for example, works as a truck driver, transporting goods for a building materials store in Bantul town, while his wife runs a sewing business in their house. As their two children are in their late teens (17 and 15 years), it can be imagined how much money they have to spend on education. The same applies to the family of Gimin, who works every day as a carpenter. Although the wife helps by selling *tahu* in the local market, it is difficult for this family, which has three children (two

adults and one less than five years old), to improve its level of welfare. The Amat Mangun family, which is engaged in the small-scale *tahu* industry, is in the same position, as is the Samijo family, which makes rope from palm tree fiber (*ijuk*).

Temonkulon village

Table 7.1 showed that of the twelve sample households in this village, four were in the accumulation category, three in the consolidation category, and five in the survival category. Not many changes occurred in the type of livelihood system during the recent five-year crisis period. As can be seen from table 7.4, only one household experienced a change, namely, that of the Sugito family, which moved from consolidation at the beginning of the crisis to accumulation at the present time. Even this change is traceable not to the crisis but to the stage in the family's life cycle, for they not longer have the burden of children's educational expenses. Most of the existing changes occurred in each kind of livelihood system, that is, there was a drop in quality. Table 7.5 shows that this change was caused by phenomena associated with the crisis, namely, the rise in the prices of basic necessities and, in the specific case of farmers, the increase in farm inputs and the low selling prices for agricultural products. More details are now given of each kind of livelihood system according to capabilities, household assets and the fulfillment of needs.

Table 7.4 *Changes in Livelihood Strategies in Temonkulon Village, 1998 and 2003*

Family name	*LS 2003*	*LS 1998*	*Changes in livelihood systems?*	
			Due to other factors	*Due to the crisis*
Suyatno	accumulation	accumulation	no	no
Jujur	accumulation	accumulation	no	no
Muhdahlan	accumulation	accumulation		yes (lower, agricultural inputs >)
Sugito	accumulation	consolidation	yes (demographic factors)	
Sujendro	consolidation	consolidation		yes (lower, agricultural inputs >)
Hadi Sunaryo	consolidation	consolidation	no	no
Suwarjono	consolidation	consolidation		yes (lower, cost of living >)
Kasan Mujiono	survival	survival	no	no
Sudarman	survival	survival		yes (lower, cost of living >)
Kasiro	survival	survival	no	no
Kasan Muhtadi	survival	survival	no	no
Hadi Pranoto	survival	survival	no	no

Accumulation households in this village are dominated by village officials, public servants, and teachers. On the whole they have more than one source of income. Employment combinations within this group consist of both husband and wife working as teachers or village officials/teachers also engaged in farming. A fairly significant source of supplementary household income is the cultivation of commercial crops on the home lot. This is an agricultural area and village residents generally have large home lots (250 to 750 square meters). The income security of these households is quite high, from the point of view of the size of their income and their low level of consumption expenditure. In the case of those who own large stretches of *sawah* (such as the Muhdahlan family) labor participation is high. On the whole, they no longer make use of household labor but prefer to employ wage laborers from outside the village. The reason that they gave for employing laborers from another village is that they generally regard the use of such labor as more efficient because the number of man-hours is greater. The welfare level of accumulation households in this village can be said to be greater and more secure than that of accumulation households in Trimurti. If this is linked to the pattern of household consumption, it appears that there are not many significant differences by comparison with the pre-crisis situation.

There are no striking differences between accumulation and consolidation households in composition of employment and types of household assets. Besides the fact that the latter own smaller *sawah* holdings, the differentiating feature is their position in the household's life cycle. As was found in the other research villages, households that have dependent children approaching adulthood encounter difficulties in raising their level of welfare.

Survival households in this village usually have a single source of income, as landowning farmers (with limited holdings), tenant farmers, agricultural laborers, and "odd-job" laborers. As in the other research villages, this group is the largest in the village community as a whole. Because the prices of basic necessities are increasingly beyond their reach, many of these households have gone back to the use of their home lot as a source of daily food. Even more than that, the home lot is also used as a source of family savings in the form of cattle or goats. There are strong indications that they have returned to a subsistence pattern.

Ponjong village

Only two of the twelve households chosen as the sample for the in-depth survey are classed as accumulation households, while four are consolidation and the remaining six are survival households. Not many significant changes in classification took place over the five-year crisis

Table 7.5 *Changes in livelihood strategies in Ponjong Village, 1998 and 2003*

Family name	*LS 2003*	*LS 1998*	*Changes in livelihood systems?*	
			Due to other factors	*Due to the crisis*
Kamismiyadi	accumulation	accumulation	yes (higher, additional turnover)	
Tukiman S.	accumulation	accumulation	no	no
Jamal Wajiri	consolidation	consolidation	no	no
Sakino	consolidation	consolidation		yes (lower, operational >)
Siswowiharjo	consolidation	consolidation	no	no
Sukino	consolidation	consolidation	yes (higher, demographic)	
Imam Bukori	survival	survival	yes (higher, demographic)	
Jarwo Utomo	survival	survival		yes (lower, prices >)
Legiyo	survival	survival		yes (lower, prices >)
Ngatijo	survival	survival	no	no
Suwitorejo	survival	survival	no	no
Jumidi	survival	accumulation		yes (furniture orders <)

period, as table 7.6 shows. Most of the changes occurred in the quality of each group. In the case of the accumulation group, there was an increase in quality in the corn-crisps industry. Marketing of the products of this industry is no longer just local in scope but is already regional and even national, for regular sales to Jakarta and Medan are already being made. In the consolidation group a decline in quality occurred in activities related to transportation. This stems from the fact that operational costs underwent a large increase. Within the survival group many households experienced a fall in quality because they could no longer afford the increases in the price of goods, especially those goods connected with basic needs.

Households in the accumulation group usually have more than one source of income, for example, employment as a village official and as a farmer, or as a teacher and an entrepreneur in agro-industry. The consolidation group generally consists of farmers who own rather large land holdings, or have some other occupation such as that of a driver or a primary school teacher owning a small amount of non-irrigated land or a home lot. In this group, wives or other family members usually also supplement household income, for example, by selling in a market or establishing a stall of some kind in their house. The survival group usually consists of agricultural laborers, tenant farmers, farmers with extremely small holdings and people with other occupations such as drivers or owners of businesses that became bankrupt (like a saw-milling business).

One aspect that warrants attention in determining livelihood systems in this village is the number of family members still in high school or university. As already noted, the cost of education at these levels is borne fully by the parents and for the majority of village people this is a heavy burden. Interviews revealed that household the outlay on education can be more than half of the household's routine expenditure. At certain specific times such as the new school year, savings in the form of money or goods (usually livestock like cattle or goats) have to be used for this purpose.

Since the prices of basic necessities are increasingly beyond their reach, many households (especially from the survival group) have gone back to using their home lot as their main source of daily food. They have gone even further and also use the home lot for the raising of cattle or goats as a form of family savings. There are strong indications that during the crisis they reverted to a subsistence pattern.

Crop failure is a major disaster for the daily lives of survival households. In this village crop failure is more frequently caused by deviations from the normal climatic pattern, as happened this year, whereas in earlier times it was traceable to other factors such as attacks by rodents. In the post-crisis period, however, this never occurred. For these households, factors causing crop failure were more of a worry than the economic crisis. Why so? Because the economic crisis affected only their financial position, whereas crop failure meant the loss of their whole livelihood.

Conclusions

The most important conclusion that can be drawn from the present study is that the economic crisis certainly had a significant impact on livelihood systems in "rurban" areas. Nevertheless, the intensity and nature of that impact varied greatly, depending on space and time. In general, the effects of the crisis began to be felt in all research areas six months after "panic" occurred at the national level. Virtually all villages experienced a shortage of goods and money as well as a profound atmosphere of uncertainty. Changes in the diet of the community (which obviously declined to a lower level) and criminal actions (theft, burglary, and illegal logging) were common. Instability in the system of government at both central and regional levels led to an atmosphere of "stress", while "panic" became more evident among the community. This situation continued for the next six months, until a new president was elected in a democratic manner. Even so, the calmness that now existed among the communities in the research areas as a consequence of the political stability could not restore the situation that had prevailed

before the crisis. The reason was that the capacity of these communities to continue with their lives had reached its lowest point: there was no longer any capacity left to expand (a person was fortunate if he could just maintain his life). Even new government policies did not greatly help, while in some cases they actually caused further hardships for the community, especially those policies connected with removal of the fuel subsidy and subsidies for agricultural inputs.

A condition of "shock and stress" certainly occurred in the research area, but this happened at the beginning of the crisis and lasted for only the next two years. After that, the majority of the people no longer regarded the situation as a crisis (which gave rise to panic and unrest) and they became accustomed to a pattern of life 'as it is now'. The pattern referred to is one characterized by high living costs that stem from the higher prices for basic necessities (which are more than twice those of the pre-crisis period), the high price of inputs and the increase in the wages of laborers. The increase in wages forced household industrial undertakings that were not too large to make greater use of the labor of household members.

The study has also revealed the existence of significant differences in impact between villages and between strata within communities in the research areas (like those revealed in livelihood systems). In the case of differences between villages, for example, it would seem that communities in villages close to the city (Maguwoharjo) adapted more easily to the crisis than those that were relatively far from the city (for example, Ponjong and Temonkulon). The most striking adaptation was the utilization of local resources as sources of income and a means of maintaining a living. "Rurban" communities on the outskirts of the city preferred to use their home lots as centers for service activities such as the renting out of houses or rooms, stalls, and stores, or other services that were related to the nature of Yogyakarta as an educational city. In the case of "rurban" communities that were somewhat distant from the city, more households used their home lots as sources of daily food and savings (in the form of livestock or in some other form) in order to be able to meet both sudden and long-term needs.

In addition to distance from an urban center, the coping capacity of households in this "rurban" region was very much influenced by the main type of household resources (for example, small-scale irrigated-rice holdings or small-scale agro-industrial undertakings) and the type of relationship with the urban economy. Farm households that grew food crops found it easier to shift to the subsistence level than did households engaged in agro-industry or those that owned no agricultural land at all (for example, those employed in the *tahu* industry in Trimurti village). Apart from this, migrant workers who came from the informal sector and who returned home to their hamlet (including do-

mestic workers) obtained employment again more quickly in cities (especially Yogyakarta) than migrants who had been employed in the formal sector (in particular factory workers). Usually they returned to the city after they had worked for a while as agricultural or "odd-job" laborers in their village of origin (Kutanegara and Nooteboom, 2002). The same was true of the differences that occurred between community strata. The accumulation group was able to withstand the disruption more easily than households in the survival group, who existed in a "barely alive" condition. Even more so, survival groups in villages far from a city apparently returned to a subsistence pattern of the type that had prevailed in "the period before development". This also encouraged institutions of a customary and traditional nature such as *arisan* groups and mutual assistance at hamlet level to play a role once again. These institutions became "the final resort" for survival households in obtaining social, economic, and political protection.

8 Economic Change, the 1997 Crisis, and Livelihood Sustainability in Two Horticultural Communities in South Sulawesi

Marja Rijerse

This chapter is based on research conducted in Lembanna and Kampung Baru, two small rural communities in the municipality of Bulutana, situated in the highlands of the upper Jeneberang Valley in Gowa District, South Sulawesi. The research was conducted at the end of 2003 with the objective of unravelling the impacts of economic changes on livelihood conditions in various types of households, by paying special attention to the role of the economic crisis that started in 1997 and that affected large parts of Indonesia. Special consideration was also given to the analysis of changes in the main systems of local resource use and the sustainability aspects of these changes. As households tend to respond in different ways to developments in their external conditions, the research attempts to identify the extent to which their responses were attributed to the last economic crisis or by other, more long-term type of developments. In order to understand the changes and choices made by households between 1997 and 2003, some background information on the communities is presented first. The following section deals with the local setting and it examines several major changes brought on by external developments.

The research villages

The villages of Lembanna and Kampung Baru are part of the municipality of Bulutana, situated at the foot of the Mount Bawakaraeng (2830 meters), in the eastern part of Gowa (see fig 1). The area is characterized by a tropical mountain climate with a short dry season and a long wet season. Bulutana has abundant water sources and the flatter areas of land can remain waterlogged throughout the year. Because of the ample availability of irrigation water, the households in Lembanna and Kampung Baru were not badly affected by the El Niño draught in 1997.

The community of Lembanna was established relatively recently by people from Batulapis and Tompolo Pao, in a resettlement effort initiated in 1932 by the king of Gowa and the Dutch government. The

Figure 8.1 *Location of the research villages in South Sulawesi*

main reason for their migration was scarcity of land and water. During the last decades, the area has changed from a backward region in which the households were mainly engaged in subsistence farming (maize, passion fruit, and some extensive cattle breeding on the grasslands) to a highly commercialized vegetable belt. This agricultural revolution can be traced back to the introduction of European vegetable crops by Hajji Ulyah, a pioneer farmer from Java, starting in the 1980s. The fertile volcanic soil, combined with adequate rainfall and low average temperatures, created favorable circumstances for horticulture of mainly temperate vegetables, such as cabbage, beans, carrots, tomatoes, peas, leek, and potatoes. These crops were profitable because of a rise in the market prices due to expanding urban markets, the recent economic crisis and El Niño effects in other parts of Indonesia. The production output of these new types of crops was much higher in terms of quantity and value as compared to maize. The increased productivity and profitability of agricultural activities have had a clear positive impact on the economic growth of the region. This growth is closely connected to the increased demand for horticultural crops by urban dwellers and those in

the middle class with a high living standard. Almost all of the vegetable crops were cultivated for the urban market in Makassar and Malino or for onward-export to Kendari (Eastern Sulawesi), East Kalimantan, and even Malaysia. Lembanna and Kampung Baru were therefore able to intensify their (trading) relations with other cities and beyond. As the transport infrastructure and trading chains have improved, there were more incentives for households to diversify their horticultural crops and to engage in non-agricultural activities, such as trading or running a shop next to their house.

One of the major externally induced developments in the research area has been the increasing commercialization of agricultural production. On the one hand, commercialization of land use has been beneficial for households because the increased prices for vegetables resulted in higher income levels and better living conditions. On the other hand, commercial agricultural production depends to a large extent on access to various inputs and poor households lack sufficient capital to make these expensive investments. Furthermore, the prices of all inputs have increased markedly, especially after the peak of the crisis in 1999. Usually the richer households were in a better position to cope with the rising prices for inputs than the poorer ones.

Both communities now enjoy prosperity and signs of increased wealth are evident. Electricity has been available in Kampung Baru since 1997 and in Lembanna since 2000. The housing conditions have improved considerably and are quite good now. Most houses are built of bricks with newly laid cement floors, window frames, and corrugated iron roofs. Moreover, many houses have durable consumer goods such as TV sets and modern furniture.

Changing resource use and livelihood conditions

Most of the households in Lembanna and Kampung Baru depend on agricultural activities. In 2003, the households in the sample cultivated a total of 8,395 *ares* (one *are* is 10.10 square meters) of land, comprising horticultural land, *kebun* (mixed forest garden), and *sawah* (irrigated rice field). While Lembanna and Kampung Baru are located at an altitude unsuitable for *sawah,* some households owned *sawah* land in the lower parts of Bulutana. Horticulture is the most profitable of the three types of land use. The cultivation of *kebun* crops (coffee and passion fruit) was easy to combine with horticultural crops, because the former is not labor intensive. Usually coffee and passion fruit trees were planted near the house or along the boundary of plots of horticultural land to protect the soil.

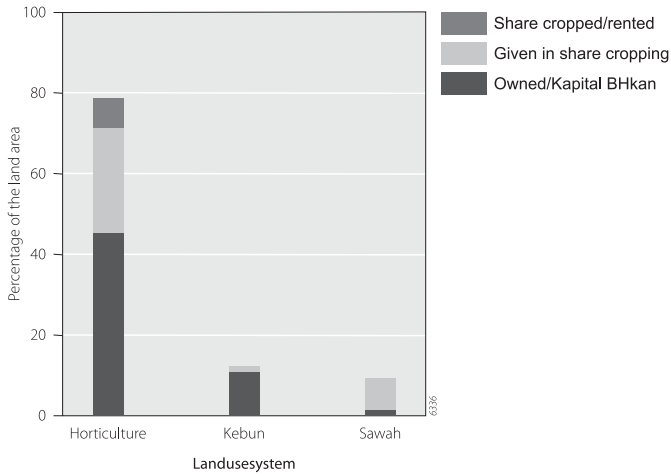
Vegetable farming has considerably improved the living standards of the farmers. Most households saw their production output rise, due mainly to the use of increased amounts of higher quality inputs, such as better seeds, chemical fertilizers, and pesticides. The agricultural incomes of many households increased correspondingly, which also improved the opportunities for these households to undertake other forms of investment and non-agricultural activities. Therefore, this rapid rural development has also stimulated local economic diversification.

Unequal distribution of suitable land is a common feature in Lembanna and Kampung Baru. Large tracts of fertile land were generally owned by wealthy farmers. Fifteen of the 33 sample households cultivated 25 to 100 *ares*, eight households between 123 and 200 *ares*, six households between 200 and 400 *ares* and four households cultivated between 600 and 1700 *ares* of land. While the majority of the land was owned and cultivated by the same household, 43 percent of the land was sharecropped. Sharecropping takes place when land is owned by one household and rented to other households for cultivation. There are several types of arrangements with landowners:

– In sharecropping (*bagi hasil* for the cultivating farmers and *bagi hasilkan* for the landowning household), the landowning household decides which crops are cultivated, and provides the cultivating farmer with inputs, such as seeds, fertilizers, and pesticides. The landowner also often arranges the marketing of the crop. In return he receives a portion of the harvest. For *sawah* this is half of the harvest, and for horticultural crops it is two-thirds. The reason for the difference is that *sawah* is said to be more labor intensive.
– There is also a credit-based type of sharecropping (*kapital bagi hasil*). The only difference with normal *bagi hasil* arrangements is that the cultivating household remains the owner of the land. Both *kapital bagi hasil* and *bagi hasil* arrangements were more commonly carried out among poorer households.
– Land can also be rented from other landowning households through cash payment (*sewa*). In this case, the household renting the land decides which crops are cultivated, and provides their own inputs, and retains all of the harvest. Figure 8.2 shows how the land that is cultivated by the sample households is distributed between horticulture, *kebun,* and *sawah,* and between the various types of arrangements between owners and cultivators. It shows for example that sharecropping is practiced on almost all of the *sawah* land, while the *kebun* is almost always cultivated by the owner.

Since land and land-based resources are primary livelihood resources, it is critical that farmers have access to, control over, and ownership of land. According to the heads of the communities, many households

Figure 8.2 *Distribution of land according to type of land use and arrangement between owner and cultivator (%)*



would like to expand their land area, but such possibilities in Lembanna and Kampung Baru are limited. Both communities are surrounded by forestland, and there is disagreement over whether households are allowed to cultivate it. The farmers believe that the person who opens up and cultivates communal land (*hutan negara*) becomes the owner. However, according to the Forestry Department it is forbidden to fell trees or to appropriate a piece of land in *hutan negara*. This dispute was yet unsolved when the research ended in 2003.

Livelihood strategy groups

The livelihood of a household is affected by a number of factors, such as its capabilities, needs, ambition, and opportunity. Some of these factors are due to deliberate and strategic behavior of the household, but many decisions reflect adaptations to ever-changing circumstances. "Adapting" means making permanent changes to the livelihood strategy. Livelihood strategies, which are considered to be long-term, are defined as "the way households deal with opportunities and limitations" and they are directly related to the external context, the availability of household resources (labor capacity, land and capital) and the household's goals and priorities. Coping responses are short-term responses to specific shocks and stresses. It is often difficult to make a clear distinction between livelihood strategies and coping responses (Zoomers 1999).

Two functions of livelihood can be identified: production and consumption. The production function is also called "enterprise", and refers to such aspects as cultivating land and making investments in income-generating activities. The consumption function has a close relationship with the production function and is aimed at securing income opportunities and satisfying the consumption needs of household members. There are several types of livelihood strategies, which can be further divided into enterprise and household strategies. Every household in control of production means was analyzed according to both an enterprise strategy and a household strategy by comparing its situation in 2003 with that before the crisis, in 1997. This approach enabled us to group livelihoods together according to their enterprise strategy or their household strategy characteristics. In this research the typology consists of three types of enterprise strategies as defined by Lösch, Fussillier, and Dupraz (1991) and three types of household strategies as defined by White (1991). Each type of strategy shows how households cope with shocks and stresses in their livelihood conditions. In the following sections different types of enterprise strategies are discussed with additional comments about their related household strategies.

Marginal-defensive enterprise strategy

Households with a marginal-defensive enterprise strategy generally are constrained by minimal access to resources such as land, capital, and knowledge. They have no possibility to increase the scale of their enterprise. Households with this type of strategy tend to minimize their risks (Lösch, Fussillier & Dupraz 1991).

In this research, eight households were found to apply a marginal-defensive type of enterprise strategy. These households cultivate small pieces of land with an average size of 50 *ares*. Most of them cultivate only sharecropped land. All households cultivate horticultural crops and five households also cultivate *kebun* crops, generally on only one or two *ares* of land. All households use inputs such as fertilizers, in most cases provided by the owner of their sharecropped land. The households with this type of strategy only use family labor for cultivating the land. These findings correspond with the theoretical assumptions on the main characteristics of a marginal-defensive type of enterprise strategy. A few households in this group also performed a second type of activity. Usually this was to earn money by working on someone else's land. There was one household that kept some goats.

Five of the marginal-defensive households practiced a survival household strategy, while three households followed a consolidation household strategy. The income of most of these households is below subsistence level, which is closely reflected in their expenditure pattern. In

general, households with a survival strategy needed to borrow money for basic household expenditures. The households with a consolidation household strategy were focusing on maintaining their standard of living. In the section 4.3 on coping responses, attention is paid to their responses on the consumption side.

Consolidating-conserving enterprise strategy

Similar to households with a marginal-defensive strategy, all households practicing this type of strategy experience limitations, mainly caused by lack of land or limited access to resources, while all the capital they generate is needed to continue their entrepreneurial activities, and therefore, is not sufficient to accumulate savings. These households also tend to minimize their risks (Lösch, Fussillier & Dupraz 1991).

Fifteen households in this sample applied a consolidating-conserving type of enterprise strategy. The size of the pieces of land that are cultivated by households in this group differ greatly. The largest land area is 650 *ares* and the smallest land area is 25 *ares*. The majority of the households cultivate both horticultural and *kebun* crops. Most households cultivate their own land. While four households own *sawah* land, three of them allocate it to sharecroppers, because it is located too far away for them to cultivate it themselves. Almost all of the households in this group use only family labor. Among the households with a consolidation or accumulation type of household strategy, however, five employed external workers.

The resource bases of the households in this group are very diverse and five households have a non-agricultural activity as their main income source. Apart from cultivating their land, other activities consist of running a shop, carrying out trading activities, taking care of cattle, and earning wages as a tea plantation worker, a construction worker, or a driver. Households employing a consolidating-conserving enterprise strategy in this research tend to own more cattle than those practicing other strategies. Apart from the initial purchasing cost, keeping cattle is an activity that needs little additional capital investment. Therefore, it is common among households that are focused on the continuation of entrepreneurial activities and that do not have the objective of capital accumulation. On the other hand, four households have opened a shop during the crisis period. This does not seem to correspond with the theoretical assumptions on this strategy type. However, almost all households in the sample, including the households in this strategy group, enjoyed bigger profits. These households preferred to continue their agricultural activity, thereby having enough money to invest in a shop.

Out of the fifteen households with a consolidating-conserving enterprise strategy, five employed a survival strategy, nine a consolidation

strategy and one practiced an accumulation household strategy. Households that applied a survival household strategy sometimes had to borrow money and reduced their expenditures on consumer goods in order to secure the continuation of their entrepreneurial activities. For households with consolidation or accumulation household strategies, the income levels were sufficient to meet the needs of the household. Only one out of the nine households following a consolidation or accumulation household strategy has been able to purchase durable goods and a few have made improvements to their houses.

Expansionist-innovating enterprise strategy

Households which apply this strategy type usually have access to sufficient production means such as capital, land, knowledge and education to enable them to accumulate capital. The aim of many households using this type of strategy is to maximize production and profit, which is reinvested in their income-generating activities. Moreover, most of the crop yields are sold at the market (Lösch, Fussillier & Dupraz 1991).

Nine households in this research applied an expansionist-innovating enterprise strategy. All households cultivated horticultural and *kebun* land, and three of them also owned *sawah* land. Most households that followed an expansionist-innovating enterprise strategy gave their land in sharecropping to other households. Sometimes they also cultivated a part of their own land themselves. Almost all of them owned one or more machines, such as pesticide sprayers, water pumps, or a car for their trading activities. Six of these households, moreover, employed external workers.

The number of income-generating activities of households in this group varies between one and four. Many of the households were also engaged in trading. Four households had a non-agricultural activity as their main income source. These activities included a shop, trading, and working as a field manager on the tea plantation.

Three of the households employing an expansionist-innovating enterprise strategy practiced a consolidation household strategy, while six of them had an accumulation household strategy. Not surprisingly, all nine households had a sufficiently strong resource base. Households with a consolidation household strategy preferred to invest in their economic activity rather than spend their money on household consumption. Households with an accumulation household strategy had sufficient money to increase both household and enterprise expenditures.

Adapting and coping responses of the local households

Although this research concentrated mainly on the changing production activities of households, it also looked at changes in their consumptive behavior. Various types of responses and adaptations can be identified with respect to resource use, such as changes in the use of capital and labor inputs, expansion of cultivated area, specialization or diversification of employment and production activities, overexploitation or abandonment of resources, and commercialization of production versus retreat into subsistence. This section describes the responses by each enterprise strategy group concerning diversification, the use of capital and family labor as well as some responses on the consumption side. For each of these adaptations and coping responses, attention is paid to the driving forces behind the different types of strategies. These forces can be divided into those that result from pull factors (taking advantage of new opportunities, for example the increased prices for horticultural crops) versus those resulting from push factors (coping with rising prices for inputs and consumer goods).

Diversification

One hypothetical household coping response to a crisis is to diminish risks by diversifying production. Diversification can act both as safety net for the rural poor and as a means of accumulation for the rural rich. In this research, a distinction has been made between on-farm diversification (the cultivation of more types of crops), and income diversification, which can be both off-farm and non-farm. Off-farm diversification refers to the increase in the number of activities of a household within agriculture (for example to become a wage worker on someone else's land). Non-farm diversification refers to engaging in non-agricultural income sources, such as non-farm rural wage employment (e.g., a driver) and non-farm rural self-employment (e.g., a trader or shopkeeper).

In Lembanna and Kampung Baru, almost two-thirds of the sample households had started cultivating new types of crops (on-farm diversification) and one-third embarked on new types of income-generating activities (income diversification). This tendency towards income diversification is possibly caused by the fact that households now need more money for buying the expensive inputs (push factor). At the same time households benefited from the rising prices for their crops, which enabled them to invest in non-agricultural income generating activities (pull factor). The main non-agricultural occupations in Lembanna and Kampung Baru were: trader, tea plantation worker or small shopkeeper. In table 8.1 the first, second, and third income-generating activities of the 33 sample households are presented, ranked according to the

Table 8.1 *Number of households with first, second, and third income-generating activities*

	First activity	*Second activity*	*Third activity*
Agricultural activity	**24**	**12**	**6**
Only horticulture	3	2	
Horticulture and kebun	16	3	2
Horticulture and/or kebun and sawah	2	4	1
Wage worker	3		
Cattle keeping		3	3
Non-agricultural activity	**9**	**15**	**2**
Shop	2	5	1
Tea plantation	4	3	
Trader	3	3	
Construction worker/driver		4	
Owner of a rice huller			1

Source: Household questionnaire 2003

amount of income per income-generating activity. The table shows that six households are engaged in only one activity, 19 households carry out two different types of income-generating activities and eight households perform three or more types of income-generating activities.

This type of diversification can be seen as a long-term strategy. The communities were already moving into commercial production before the crisis started. The high prices for pesticides and consumer goods made it necessary to find additional income-generating activities. At the same time, high prices for the crops resulted in higher income levels, which enabled households to invest in new income-generating activities. Each of the enterprise strategy groups has been analyzed to ascertain whether there were differences in the way they had diversified.

The first group is formed by households adopting a marginal-defensive enterprise strategy. Most of the land they work is sharecropped. The dependency relationship between them and the owners of their land had a strong impact on the ability of these households to improve their livelihood conditions. On-farm diversification was only possible with the involvement of the landowner who provided them with inputs. The households with this type of enterprise strategy had few opportunities to start new types of income-generating activities, as they had limited access to capital. The household members who started working after 1997 usually performed the same type of activities which other working household members already carried out in 1997.

For this group it is not possible to determine whether the on-farm diversification is a pull or a push factor. They needed to make sharecropping arrangements because they could not afford to buy the expensive inputs themselves, which can be considered as a push factor (coping

with the crisis). On the other hand, this was the only way to take advantage of the increased prices for their crops, which is a pull factor. The commercialization of households following a marginal-defensive enterprise strategy does not correspond with the theoretical assumptions on this strategy type which implies that most of the production output is consumed by the household itself, while it tends to refrain from risk-taking activities.

The second group is formed by households that applied a consolidating-conserving enterprise strategy. The main difference with the former group is that most households in this group cultivate their own land and therefore can make their own decisions. Most households with this type of enterprise strategy have started cultivating more kinds of cash crops (on-farm diversification) and obtained higher profits. The rising prices for vegetables and coffee made it attractive for households to cultivate these cash crops, which clearly is a pull factor. Many of these households have also started new types of income-generating activities: some opened a shop, and in other households, members started working on the tea plantation. It is probable that they needed additional income sources to afford the expensive inputs needed for this highly commercialized type of horticultural farming (push factor). At the same time, more capital was available for investing in (new) production means such as a shop, because of the higher farm outputs and the increased profits (pull factor).

The last livelihood strategy group is formed by households that apply an expansionist-innovating enterprise strategy. The objective of these households is to make a profit, which they reinvest in their activities. Almost all of these reinvestments were made in an existing type of activity, instead of starting a new type of income-generating activity. This is in contrast with the households in the former strategy group. The reason for this limited tendency towards income diversification was that most of them already had a non-agricultural activity before 1997. For some of them this was even their main income source. Moreover, by increasing the scale of an existing activity, for example by buying more land, households have been able to achieve advantages of scale.

Although most of the households already cultivated several types of cash crops before the crisis, many households had started with the cultivation of new types of crops (on-farm diversification). Usually they only added one or two new types of crops. This was done not only to increase profitability, but also for ecological purposes. Carrots are said to combat cabbage diseases, so they are intercropped with cabbage. Such diversification therefore can be considered as a push factor. The other driving forces behind the changes carried out by these households usually are pull factors, such as taking advantage of the increased prices for the crops and the extended consumer market.

Use of capital and labor

One of the main research objectives was to determine how the crisis had affected the resource use of households. As this research was conducted in rural communities, the main resource for most households was land. As landownership and land use have already been discussed in the previous sections, we shall focus here on the use of the two next important resources, capital and labor. Both will be studied in conjunction with the respective livelihood strategy groups.

As explained before, households with a marginal-defensive type of enterprise strategy often were strongly influenced by the dependency relationship between them and the owners of their land. The households employing this type of enterprise strategy lack capital, which limits their ability to improve their livelihood conditions. Therefore, investing in land or machinery, or starting new types of income-generating activities are not possible without external help. However, households in this enterprise strategy group rarely borrow money for their enterprise, because they usually prefer to make sharecropping arrangements in which their landowner provides them with HYV (high-yielding variety) seeds, fertilizers, and pesticides. Therefore they do not need additional capital for purchasing their inputs. These sharecropping arrangements can be identified as pull factors, since they enable the households to cope with the crisis. On the consumption side some households with this type of enterprise strategy did borrow money, but this will be dealt with in a separate subsection on the consumptive responses.

Many of the marginal-defensive households do not make full use of their own labor resources. In some households, one or more members aged between 15 and 70 did not work. In most cases, these were young women (daughters or wives) who were engaged in housekeeping. It is surprising that these households did not respond to the crisis by increasing the number of working household members. A possible reason is that the level of education of most household members was insufficient to give them access to better-paid non-agricultural occupations, and that there were no more jobs available in for example the tea plantation. Furthermore, lack of capital to start their own non-agricultural activity is also a restriction. Therefore, most household members who worked, did so on their own land or on land owned by others.

Households with a consolidating-conserving enterprise strategy need all the capital they can generate to secure the continuity of their entrepreneurial activities. Therefore, most of these households are unable to accumulate capital. Still, four out of fifteen households using this type of strategy have been able to increase their use of capital during the crisis period. Half of them invested in new types of income-generating activities such as a shop and trading activities and the others used the ca-

pital to increase the scale of their existing activities. The increased availability of capital can be identified as a pull factor, because these farmers could take advantage of the increased prices for their crops since the crisis. None of these households, therefore, had borrowed money for their entrepreneurial activities.

Households applying a consolidating-conserving type of enterprise strategy also appeared to make good use of the labor that was available in the household. Many members who reached working age during the crisis period, for example, started working on their own land or as a wage worker on the tea plantation. In other households, the wife started shopkeeping. The way in which these households make use of their labor can be considered both as pull- and push-induced factors. By starting a new income-generating activity, the household is better able to cope with the rising consumer prices and input prices. At the same time, making reinvestments in non-agricultural activities is taking advantage of the increased income from crop yields with a view to longer-term investments.

In contrast to the former enterprise strategy types, households adopting an expansionist-innovating enterprise strategy tend to reinvest most of their profits to expand production. More than half of the households using this type of enterprise strategy have increased their use of capital since 1997, but only one of them used it to increase the number of income-generating activities. Most of the households, moreover, preferred to invest in their existing activities. The households were able to increase their use of capital, because their income levels had increased considerably during the crisis period, due to both higher production output and greater profits from the crops. These are both related to the crisis through rising prices and the expansion of the consumer market. Reinvestment of crop earnings can therefore be identified as a pull-induced process.

In some households using an expansionist-innovating enterprise strategy, fewer members had to work, because the profits of their agricultural activities had risen considerably and additional sources of income were no longer required or could be covered by attracting wage labor. Most changes in the use of labor, therefore, were related to the life-cycle phase and changing household composition.

Responses on the consumption side

The production and consumption of a household are closely connected with each other, but the behavior on the production side of a household does not always mirror the behavior on the consumption side. A household might, for example, reduce its expenditures on consumer goods (survival household strategy) in order to be able to invest on the enter-

prise side (expansionist-innovating enterprise strategy). However, 20 out of the 33 sample households showed a similar behavior both in their enterprise and household. This is not surprising, because when a household for example intensifies the production of cash crops, part of the additional income often will be used to pay for the increase in the household's expenditures. In this section, the responses on the consumption side are analyzed for each type of household strategy.

Most households which practiced a marginal-defensive type of enterprise strategy also employed a survival household strategy, and for most of them the income level in 2003 was insufficient and had deteriorated since 1997. Most of these households reported that this was mainly due to the high consumer prices, which they attributed to the crisis. Their deteriorated income position meant that they had to use their savings and incur greater debt by buying more goods on credit or by borrowing from family members, while reducing their expenditures on consumer goods. Some households even had to take their children out of school in order to reduce costs as a short-term measure, despite their awareness of the long-term benefits of education for the development of their children. None of the households had been able to improve their house or to buy consumer durables between 1997 and 2003. These changes in expenditure pattern can be considered as coping responses to push factors, because they represent short-term adaptations to crisis conditions. A reduction of the expenditures on consumer goods also corresponds with the hypothetical assumptions on survival household behavior. The appendix table at the end of this chapter shows the various strategy combinations of all households in the research.

Almost half of the sample households in this research applied a consolidation household strategy. While most of them also followed a consolidating-conserving enterprise strategy, there were also some combinations with the other two enterprise strategy types. Households using a consolidation household strategy focused on maintaining their standard of living. This does not necessarily mean that their income level had not changed since 1997. Since the cost of living had risen, the households needed higher incomes just to buy the same household items. Therefore, some of these households, especially those employing an expansionist-innovating enterprise strategy, reported that their income level had improved during the crisis period and so enjoyed a higher level of income than in 1997.

The group of households employing this strategy experienced changes in the use of savings, in saving and borrowing which were caused by the high price levels for both crops and consumer goods. The prices increased because of the crisis and because of the expanding consumer market for vegetables. The high prices for the crops enabled some households in this category to save money between 1997 and

2003. Some of them saved because they anticipated more financial problems due to the crisis, but other households had to borrow money due to rising prices for inputs and consumer goods, or even had to use their savings to buy food.

For most of these households the changes in the expenditures on consumer goods, however, were small. Some increased their expenditures, but these usually can be attributed to the life-cycle phase of the household. When the number of household members for example increased during the crisis period, it is likely that more will be spent on consumer goods. Only a few households adopting a consolidation household strategy were able to renovate their house or buy durable goods.

Out of the seven households following an accumulation household strategy, six practiced an expansionist-innovating and one a consolidating-conserving enterprise strategy. This implies that these households have mostly experienced positive developments during the crisis period, that is, both in consumption and production. The income position of all of these households has clearly improved since 1997 and has been strongly affected by the crisis. The increased profits can be explained by the same two reasons as for the previous household group, but were reinforced by advantages of scale, and better crop yields through the use of higher quality inputs.

Most of these accumulative households have been able to save more money during the crisis period than before 1998. None of the households had to borrow money. One household has been lending less money to other households than before 1998, because of concerns that the indebted households would not be able to repay the loan. Most households in this group also spent more money on all types of consumer goods, but frequently this was caused by a growing number of household members. Moreover, all households renovated their houses during the crisis period and many also bought durable goods such as a TV set. Again these increased expenditures correspond with the assumptions underlying the accumulation household strategy.

The sustainability of the livelihood strategies

A sustainable livelihood is usually defined as the capability of people to make a living and improve their quality of life without jeopardising the livelihood options of others, either now or in the future (Singh and Wanmali 1998, p. 1). The sustainable livelihood approach identifies not only the types of assets households use, but also analyzes how existing livelihoods are affected by new technologies such as the introduction of new types of high-yielding varieties of crops and seeds, and by social

and economic issues. In this research, four different aspects of sustainability have been distinguished (Eijkemans 1995, pp. 53-55; Chambers and Conway 1992, pp. 7-8):

1. The ability to cope with and recover from shocks and stresses;
2. Economic effectiveness, ensuring an adequate level of productivity and income generation;
3. Ecological integrity, ensuring that livelihood activities do not irreversibly degrade natural resources within a given ecosystem;
4. Social equity, which suggests that promotion of livelihood opportunities for one group should not foreclose options for other groups, either now or in the future.

Coping ability and economic effectiveness

All households have to make decisions with respect to these aspects and households in every strategy group give different priorities to them. However, most households will primarily focus on surviving shocks and stresses. In Lembanna and Kampung Baru, many households have been able to benefit from the crisis and therefore it was not experienced as a real shock. However, some households, especially those which apply a marginal-defensive enterprise strategy, have had difficulties in coping with the stresses brought about by the crisis. These households mainly focused on surviving in the short-term, and the sustainability of their livelihood was heavily influenced by the fact that they had limited access to land, capital and knowledge. Most of them cultivated sharecropped land according to *kapital bagi hasil*, which enabled them to start cultivating cash crops. However, the cultivation of sharecropped land denotes a strong dependency relationship with the owner, because it is the owner who decides which crops the sharecropper will grow while he receives two-thirds of every harvest (a disproportional reward which affects social equity in a negative sense). The marginal-defensive households therefore tend to generate little surplus and income, which makes them more vulnerable to stresses and shocks. They clearly have suffered the most from the high prices for consumer goods and inputs, which they usually tried to overcome by reducing household consumption expenditures and by borrowing money.

Households using a consolidating-conserving enterprise strategy mostly generated sufficient surplus and income to maintain their production level and, consequently, were better able to cope with shocks and stresses. They generally cultivated their own land and, therefore, could fully benefit from the increased profitability of the cultivation of cash crops. They also were able to focus more on economic effectiveness, because their increased income levels (caused by increased production output and a higher profitability) allowed them to make invest-

ments in (new) types of activities. More than half of the households in this category engaged in risk-spreading through new types of income-generating activities, which made them less vulnerable to external disturbances or shocks. At the same time, additional income sources were needed to continue production at the same level, because the production costs, such as the inputs, had become far more expensive since 1997.

Not surprisingly, the expansionist-innovating households were best able to cope with shocks and stresses, because their resource base and income position were already strong before the crisis. Like the households with a consolidating-conserving strategy, they paid most attention to the economic effectiveness of their activities, because their aim is to accumulate capital. All of these households have been able to benefit from the crisis and almost all of them had improved their income position since 1997. Many of these households have reinvested capital in their ongoing activities: some have bought land, others opened a shop or bought new machinery for their agricultural activity or a car for their trading activities. Most investments, however, were made in the main types of activities that the households already performed for some time, because new types of income-generating activities require more investments for the same returns and also often involve higher risks.

Ecological integrity

Before analysing the ecological integrity of the resource use by the sample households, some comments should be made about a number of ecological developments that occurred in the research area. Recently some serious environmental problems have become evident in Lembanna and Kampung Baru. The growing number of people forced households to live in land areas that are ecologically more fragile; this inevitably contributed to the further degradation of land. Some progressive farmers have adopted the Javanese way of vegetable farming from *Hajji* Ilyas and have built terraces to prevent soil erosion, but many slopes are still unterraced.

Another aspect of land degradation is soil exhaustion, which is caused by the highly intensive cultivation of the land. The sowing density per *beddengan* (rows in which the crops are planted) has increased considerably. Moreover, most households cannot afford to leave their land lying fallow before a growing season, because the income earned from the production output is direly needed to buy new inputs. Many farmers reported that their land required increasing amounts of fertilizer inputs to keep production output at the same level. The excessive use of fertilizers[1] and pesticides clearly has a negative impact on both the biotic environment and the health of producers and consumers.

Recently a number of crop diseases have appeared and some have become more prevalent in Lembanna and Kampung Baru. These are clear indications of a decreasing sustainability of the land use. A cabbage disease (*akar gadah*) emerged in 1996. It is a mold bacterium which putrefies the seeds and roots of the cabbage, as a result of which the plants cannot grow. The disease has already destroyed the cabbage harvests of many households in spite of the fact that the local farmers group (*kelompok tani*) had given training and advice on the prevention of the disease.

Marginal-defensive households tend to pay little attention to the environment. This is partly due to the fact that they cannot join the local farmers group where information on sustainable land use is given. In addition, they are obliged to use the chemical inputs that they receive from their providers or landowners. Most households have increased the use of inputs when they started cultivating crops for the market instead of crops for their own consumption which need fewer inputs. However, as the directly affected land areas are very small, the overall ecological sustainability of the village land has not suffered too much from the intensified cultivation of cash crops by these households.

Although the households using a consolidating-conserving strategy have a better access to information on more sustainable ways of using the land, only few of them effectively used this knowledge. The ecological sustainability of the land use practices by these households has declined considerably, because all the households increased their use of chemical inputs in order to intensify the cultivation of cash crops. Some of the households already reported decreases in their production output when they used constant amounts. This indicates that the soil has become dependent on the use of ever-larger amounts of inputs for maintaining the same level of productivity.

Households employing an expansionist-innovating strategy were expected to be more aware of environmental issues, because in general they are more highly educated and have better access to information. Therefore, they should have a better understanding of the importance of a well-balanced and sustainable type of land use in the longer term. In this research, the facts about the ecological integrity of these households proved to be somewhat contradictory. On the one hand, some households indeed have adopted good environmental practice, for example, using biological control measures to combat the cabbage disease. This involved the introduction of natural predators instead of pesticides and intercropping carrots with cabbage. On the other hand, the use of very large and increasing amounts of fertilizers is still strongly entrenched in their approach to cultivating cash crops.

Social equity aspects

The last aspect determining the sustainability of livelihood strategies to be analyzed concerns their social impact. For marginal-defensive households, the dependency relationship with the owner of their land appears to have deteriorated since 1997. As explained before, the households depend heavily on the landowners, because it is the latter who provide the inputs and the information about the use of pesticides as well as arranging the marketing of the crops. Such dependency does not seem socially sustainable, because the households are now more vulnerable to exploitation by the landowners and are not able to make their own decisions. In case of external shocks and stresses this may easily backfire on both the environment and the existing social relationships.

Households following a consolidating-conserving or expansionist-innovating strategy mainly cultivate their own land and therefore are not engaged in this kind of dependency relationship with other households. Some of them are engaged in trading and have increased the scale and profitability of these activities. The increased profitability of these activities does not automatically have a negative impact on other households. However, it was mentioned by some households that the traders have taken a bigger share of the farm gate price since the crisis. This leaves less for the farmers, and consequently leads to a decline of social equity. Considering that especially expansionist-innovating households own ample production means and assets, these would be the only ones that could really maintain a certain level of social equity in the entire community. However, as they seem to be most interested in the accumulation of their own wealth, it seems justified to conclude that they will continue to earn profits at the expense of other households (i.e., through trading and sharecropping).

Some rich households have increased the land area that they allotted to sharecropping, with the consequence that more households now have become dependent on these landowning households. This is the only way for most poor households to cultivate land and earn an income, but since the landowning household receives a two-thirds share of the harvest, this skewed relationship with owners prevents the sharecropping household from accumulating enough wealth for a sustainable livelihood. The expansionist-innovating households will always keep control of the production assets, which blocks the road to social mobility. Thus the richer households have grown richer since 1997, while the poorer households have gained very little. Some consequences of this widening gap between the poor and rich households are discussed in the next section.

Institutional changes and local policy programs

Policies, institutions, and social processes play a vital role in achieving a sustainable livelihood. According to Ellis (2000, pp. 38-39), institutions are the formal rules, conventions, and informal codes of behavior that impose constraints on human interaction. The role of institutions is to reduce uncertainty by establishing a stable structure to human interaction. The institutions should enable the community to mobilize and allocate resources more easily through the control of household claims. Firstly, this section pays attention to changes in a local type of unpaid labor exchange and to social relations between various groups of households. Secondly, some government projects and programs will be discussed, which also had an impact on the resource use of the households.

In Lembanna and Kampung Baru a traditional system of mutual unpaid help has been developed where one household will assist another. This is known as *kio-kio'*. A reason for taking advantage of *kio kio'* could be insufficient money to pay wage workers or, when households are short-handed and unable to meet labor demand during harvesting and planting seasons. Generally, only small-scale and poor farmers engage in *kio-kio'*, because the richer farmers can afford to hire wage workers.

Since the crisis and advancing commercialization, people seem to have become more self-centered as everyone tries to become richer or at least maintain his relative position. This trend was also observed in the changing mutual helping system with the heads of the communities now supporting paid forms of *kio-kio'*. Their opinion was that people are only able to improve their social economic position when they have money and thereby become less dependent on others. Therefore, according to them, everyone should be paid for the activities they perform.

Another institutional change in the research villages was found in the way in which some of the traders withdrew surpluses from other households. This change is related to the increased prices for inputs. Many marginal-defensive and even some consolidating-conserving types of households did not have sufficient money to purchase the more expensive inputs. The expansionist-innovating households, which have good access to capital, however, could easily afford these inputs and therefore could start a trading business. It was commonly observed that these traders provided poorer farm households with inputs, for which these households paid after harvest by ceding a large part of their harvest (sometimes arranged in *kapital bagi hasil* arrangements). In this way, the households became bound to the traders and feel obliged to deal exclusively with this trader for the marketing of their surplus crops. Although this kind of *bagi hasil* arrangements often are the only opportunity for the poorer households to commercialise and improve

their production, these arrangements are especially profitable for the providing and trading households. The sharecropping households become more vulnerable to the decisions of their providers as they are not able to make their own choices with respect to the type of crops and inputs they use or the marketing channel.

Good governance is crucial to the achievement of livelihood sustainability. In the research area various programs and projects have been implemented. At the provincial level, *kelompok tani* (cooperative local farmer groups) were established in 1997. This bottom-up approach was a result of the *Otonomi Daerah*, the regional autonomy and decentralization policy. One is free to become a member of these local farmer groups and to use the machinery that is collectively owned. The *kelompok tani* does not provide or sell fertilizers and pesticides, because all households have their own relations and agreements with traders. In the *kelompok tani* information is exchanged, discussions are held and proposals for projects are formulated. These projects aim at improving the productivity and efficiency of their agricultural activities. However, households that do not cultivate their own land cannot join the *kelompok tani*, because they are not able to make their own decisions on land use. This excludes the very poor and landless farmers who, as a result of this exclusion, depend mainly on the provision of information and inputs by the owners of the land that they are cultivating.

Another bottom-up project is DAFEP (Decentralization of Agriculture and Forestry Extension Project), which started in 2000. This project is subsidized by the World Bank and is also a cooperation with the TPH, the Food Crop and Horticulture Department. DAFEP is an FMA project (Farmer Managed Extension Activities), which has been developed by the Department of Agriculture of Indonesia. The purpose of this program is to foster the empowerment of the farmers and to improve their economic activities. The project itself is generally aimed at supplying farmers with information about the use of resources, for example, on cultivation techniques. No direct funds or physical help are provided. In Kampung Baru, a project has been implemented in which a demonstration was given by field extension workers (PPL) about the use of HYV seeds for potatoes.

There are also special projects focusing on the sustainability of land use, such as the "field schools" (see box 8.1). Courses are given in which farmers are taught how to minimize the use of inputs and manage crop diseases. The increased attention for more sustainable types of land use is a move in the right direction, but unfortunately only a few farmers use the knowledge gained in the courses, because they have become used to applying large amounts of chemical inputs. In addition, most farmers do not (or are not able to) read the instructions provided, which also tends to perpetuate the misuse and overuse of the inputs.

Box 8.1: Field schools

Since May 2003, projects have been implemented to improve land use. An Australian organization for Forestry, Fishery, and Agriculture (AFFA) provides the funds and cooperates with a non-governmental organisation Yayasan Field Indonesia Jakarta. The project, which involves field schools, is called *Sekolah Lapang Pengendalian Hama Terpadu* and aims at preventing crop diseases by monitoring the crops. In Lembanna there is a field school for cabbage cultivation and in Kampung Baru there is one for potatoes. The field schools advise against the use of excessive chemical inputs and recommend the use of organic fertilizers instead. However, many farmers are of the opinion that the use of chemical inputs is much easier, since they can be used in smaller amounts. For example, one needs 100 kilograms of chicken manure instead of 10 kilograms of chemical fertilizers for the same area of land. Therefore, only a few farmers actually used their newly gained knowledge. Furthermore, there are no sanctions against excessive use of chemical inputs.
Over a period of four months, a lesson is offered once a week, particularly on the use of pesticides and insecticides. The first part of the lesson takes place in a classroom and, in the second part, every farmer inspects his own crops. The key objective of the project is that the farmers start cultivating their cabbage without using any chemicals. Every week they examine ten cabbages from every *beddengan* (row in which the crop is planted). Only when the average number of rotten or diseased cabbages per *beddengan* exceeds five, can they start using chemicals to prevent the disease from spreading.

Another weak aspect of these projects is that the courses at the field schools are only accessible to members of the *kelompok tani*. Of course there is no guarantee that all projects are effective in the sense of optimal resource allocation, or that they are fair in terms of access rules applied to different types of farmers. But the programs should at least aim at the participation of the various groups presented in the community, varying from poor to rich farmers, as each farmer has his own capacities, perceptions, needs, and opportunities.

Summary and conclusions

This chapter presented the main results of a study on the impact of economic changes on livelihood strategies in two horticultural commu-

nities in South Sulawesi. The research addressed the extent to which external conditions have had an impact on the resource use systems of rural households, their livelihood strategies and their sustainability. Both Lembanna and Kampung Baru have recently undergone strong economic development. Most of the households in the area have become more prosperous and almost all households are now engaged in the cultivation of commercial horticultural crops. This agricultural "revolution" has been supported by the increasing prices for vegetables (also due to the inflation as arising from the economic crisis) and by the improved infrastructure.

Some institutional changes in the research area have also had an impact on the type of resource use of the households. There have been a number of local projects that stimulated the cultivation of horticultural crops. Credit projects had been developed to enable households to borrow money for buying seeds. In addition there were field schools in which household members were taught to use their land in a more efficient and sustainable way. However, not all households could profit from these projects. The credit and extension projects were only accessible to households that cultivated their own land, thereby excluding the poor and landless households.

In this research, several types of long-term livelihood strategies have been distinguished, which indicated the way in which a household made use of its resources and how it acted on the consumption side. There are both similarities and differences in the way the various types of households have responded to the changes in external conditions. All households have intensified the cultivation of different types of cash crops (on-farm diversification) and commercialized their production. The rising prices for vegetables made it attractive for households to engage in the cultivation of cash crops. These changes in production, however, require access to capital. The households practicing a marginal-defensive enterprise strategy type lacked money for the necessary investments (such as buying HYV seeds) and consequently were dependent on other households for the provision with land and inputs. Many of them, therefore, participated in (credit-based) sharecropping arrangements.

A clear difference between the various types of enterprise strategies can be found in non-farm diversification. Most households using a marginal-defensive type of enterprise strategy had insufficient money to start new types of income-generating activities. Households employing an expansionist-innovating type of enterprise strategy also hardly started new types of income-generating activities. Instead, the latter type of households reinvested in ongoing activities and, therefore, have been able to increase their profitability through advantages of scale. In contrast, almost all of the households adopting a consolidating-conserving enterprise strategy started new types of income-generating activities,

such as shop-keeping and working on the tea plantation. Possibly because here the additional sources of income were sorely needed to afford the expensive inputs. This type of income diversification also tends to create a more sustainable livelihood, because the households become less vulnerable to shocks in one of their other resource use systems.

On the consumption side, especially the households following a survival household strategy had suffered from the high prices for consumer goods. Many of them had to borrow money so that they could buy consumer goods. Some of these households had to reduce their household expenditures and even took their children out of school. The households applying a consolidation household strategy usually had sufficient money to meet the needs of the household and did not show many changes in their expenditure pattern. The accumulation households, which generally enjoyed an improved income position, could increase their household expenditures on basic as well as durable consumer goods, and on improvements to their houses. At the same time, many of them had been able to increase their amount of savings.

It has become clear that the net impact of the crisis in these horticultural villages had resulted in an upward shift in most of the enterprise and household strategies. In this research special attention has been paid to the driving forces behind the different types of strategies. These forces have been divided into those that result from pull factors versus those resulting from push factors. It can be concluded that most of the developments that occurred in households following a consolidating-conserving or expansionist-innovating type of strategy can be classified as pull factors. They have been able to profit from the rising prices for vegetables by increasing their cultivated land area or by on- and non-farm diversification. The developments that occurred in the marginal-defensive households on the other hand are generally related to push factors. They lacked the capital to cope with the increased prices for inputs and often solved this problem by engaging in *kapital bagi hasil* arrangements, buying consumer goods on credit and using up saved money.

Another major topic of interest in this research was the sustainability of the livelihoods. Four different aspects of sustainability have been distinguished: the ability to cope with and recover from shocks and stresses, economic effectiveness, ecological integrity and social equity. Households practicing different enterprise strategies give different priorities to these aspects. The marginal-defensive households often can only concentrate on coping with and recovering from the high prices. The more prosperous the households are, the more attention they will pay to the economic effectiveness of their activities. Many households following a consolidating-conserving or expansionist-innovating type of enterprise strategy have made investments in their enterprise to improve their profitability.

In Lembanna and Kampung Baru, most households seem to pay little attention to the ecological integrity of their resource use. Most of them still focus on short-term developments. However, since the production output of the land of some households started to decrease, some of them have connected this with the overuse and misuse of inputs and realise that this problem has to be solved in order to secure survival in the long run. These households, however, are still a minority.

Issues of social equity obviously get the least attention. Most households choose the accumulation of personal wealth above community interests. The increasing cultivation of cash crops by many households in the area has made it attractive for the wealthier households to start trading in inputs. The expansionist-innovating households started providing the inputs to poorer households and in return received a part of their harvest. As a result of trading in inputs, the expansionist-innovating households also started trading in crops, which further increased their profits. In addition to these trade arrangements, sharecropping (*bagi hasil* and *kapital bagi hasil*) arrangements were made, which also were the most profitable for the providing households, because they received two-thirds of every harvest. It seems likely that the expansionist-innovating households in the long term will continue to own the assets and will benefit the most from the work of other households. It is generally not considered a socially sustainable condition when a small number of households can make vital decisions for the majority of other households, especially when the latter households are less well-informed about crops, marketing and prices. On the other hand, this might be the only possibility for the poorer households to cultivate the lucrative cash crops.

Finally, there is an important task for the government to give sustainability a more prominent place. Projects should not only pay attention to the improvement of productivity, but also to stability and sustainability of the resource use. The existing projects already are a step in the right direction, but the fact that landless households can not profit from these projects is a barrier to equal socioeconomic chances. Re-greening projects and restrictive legislation for the cultivation of steep slopes also depend on government interventions which can make households aware of the importance of more sustainable types of land use. However, the final decisions on sustainable resource use lie within the power of the farmer, who has to find the right balance between productivity, sustainability, stability and social commitments.

Annex

Strategy combinations of all households in the sample

location	*SE sc. 1997*	*SE sc. 2003*	*SE gr. 1997*	*SE gr. 2003*	*Resource base*	*Lifecycle phase*	*Enterprise strategy*	*Household strategy*
K.B.	6.33	4.33	1	1	Horticulture and *kebun*	2	Marginal-defensive	Survival
K.B.	5.99	5.31	1	1	Horticulture and *kebun*	4	Marginal-defensive	Survival
L	6.33	5.33	1	1	Only horticulture	5	Marginal-defensive	Survival
K.B.	6.33	6.67	1	1	Only horticulture	4	Marginal-defensive	Survival
L	5.87	6.87	1	1	Horticulture and *kebun*	5	Marginal-defensive	Survival
L	5.33	5.33	1	1	Only horticulture	2	Marginal-defensive	Consolidation
K.B.	4.33	6.33	1	1	Horticulture and *kebun*	4	Marginal-defensive	Consolidation
K.B.	10.99	10.97	2	2	Horticulture and *kebun*	5	Marginal-defensive	Consolidation
L	5.67	7.67	1	2	Horticulture and *kebun*	4	Consol. -conserving	Survival
K.B.	8.13	8.81	2	2	Mainly non-agricultural	5	Consol. -conserving	Survival
K.B.	7.00	9.89	1	2	Horticulture and *kebun*	2	Consol. -conserving	Survival
K.B.	10.33	10.33	2	2	Mainly non-agricultural	4	Consol. -conserving	Survival
L	10.65	13.66	2	3	Horticulture and *kebun*	6	Consol. -conserving	Survival
L	11.33	8.33	3	2	Horticulture and *kebun*	6	Consol. -conserving	Consolidation
L	7.57	8.57	2	2	Only horticulture	3	Consol. -conserving	Consolidation
K.B.	10.33	10.29	2	2	Horticulture and *kebun*	5	Consol. -conserving	Consolidation
K.B.	7.99	10.99	2	2	Mainly non-agricultural	2	Consol. -conserving	Consolidation
L	9.99	10.99	2	2	Horticulture and *kebun*	4	Consol. -conserving	Consolidation
L	9.20	11.20	2	2	Horticulture and *kebun*	5	Consol. -conserving	Consolidation
L	11.33	11.50	3	3	Mainly non-agricultural	5	Consol. -conserving	Consolidation
K.B.	13.67	15.67	3	3	H and/or keb. and saw.	3	Consol. -conserving	Consolidation
K.B.	14.41	18.41	3	3	Mainly non-agricultural	5	Consol. -conserving	Consolidation
K.B.	9.07	10.36	2	2	H and/or keb. and saw.	2	Consol. -conserving	Accumulation
L	7.67	9.26	2	2	Horticulture and *kebun*	4	Expans.-innovating	Consolidation
L	11.00	9.33	2	2	Horticulture and *kebun*	5	Expans.-innovating	Consolidation
K.B.	8.51	11.66	2	3	Mainly non-agricultural	3	Expans.-innovating	Consolidation
L	7.33	6.85	1	1	Horticulture and *kebun*	2	Expans.-innovating	Accumulation
L	7.33	7.33	1	1	Horticulture and *kebun*	2	Expans.-innovating	Accumulation
L	13.23	13.23	3	3	Horticulture and *kebun*	2	Expans.-innovating	Accumulation
K.B.	13.56	13.41	3	3	Mainly non-agricultural	4	Expans.-innovating	Accumulation
K.B.	13.24	14.60	3	3	Mainly non-agricultural	2	Expans.-innovating	Accumulation
L	15.35	15.36	3	3	Mainly non-agricultural	4	Expans.-innovating	Accumulation

– Location: L. is Lembanna, K.B. is Kampung Baru
– SE sc.: social economic score, based on eight factors. Important factors are: the primary occupation of a household, the educational level of the head of the household, the level of income, and use and ownership of land. This score has been analyzed for all households both before and after the crisis.
– SE gr.: social economic group, households are divided into three groups according to their SE score.
– Life-cycle phase. The six life-cycle phase groups in this study are:
  1. Newly formed households that consist of two young adults who do not yet have children.
  2. Young households that consist of two young adults and children up to 14 years old.
  3. Young households that consist of two adults and children older than 14 years who do not work yet.

4. Households in which the children are starting to work.
5. An extended family in which different generations work, live, and consume together.
6. Older households in which the number of members is declining because of children starting their own household. Sometimes only two older members remain.

– Resource base: *saw.* = *sawah*; H = horticulture; *keb.* = *kebun*.

9 Krismon Yang Selamat: The Crisis Impact on Livelihood Strategies in Desa Parigi, South Sulawesi

Mascha Singeling

Introduction

The economic crisis in Indonesia, named *krismon*, started in 1997 and soon evolved into a total crisis named *kristal* (*krisis total*). The dramatic fall of the exchange rate of the rupiah triggered multiple effects of economic destruction which caused social unrest and ethnic conflicts and thus created instability all over the country. Unlike other Asian countries such as Korea, Thailand, and Malaysia, which recovered quite soon from the crisis, Indonesia still had not completely recovered from the economic crisis as of 2006, and was even hit by a new wave of natural crises.

Despite the negative connotations of the word *crisis*, many researchers argue that this crisis did not affect all households to the same extent, or negatively (White, Titus & Boomgaard 2002). Some researchers, for example, conclude that a number of households even benefited from it. Some people saw their incomes decline, whereas others experienced a dramatic increase in their income, especially during the peak of the crisis in 1998. The reason why some households were able to benefit from the crisis while other households experienced dramatic negative effects is an interesting question that still needs to be answered here. In the meantime, a lively debate has emerged about the considerable differences in impacts and responses among the various types of communities, sectors, locations, and social strata of the households in Indonesia (cf. Lont & White 2003). This debate goes beyond the economic crisis of 1997-1998, as it also examines the wider implementations for poverty reduction in general.

This article presents the main findings of a study conducted on the impact of the economic crisis on livelihood strategies and resource use of the households in *desa (village) P*arigi (South Sulawesi) and aims at contributing new insights to the debate by examining the long-term crisis impact at the *desa l*evel. Before analyzing the crisis impacts, however we shall first present a short discussion of the village used for this study, and its livelihood systems.

The local context: Desa Parigi

Desa Parigi is situated in the uplands of the central Jeneberang valley along the main road from Makassar to Malino and consists of three settlements called *dusun*. Two *dusuns* are situated along the roadside in the valley while one *dusun* is located in the more isolated mountains. According to the *Profil Desa Parigi* (statistics of desa Parigi), this *desa* was inhabited by 924 households and had a total population of 4098 people in 2001/2002. Farming is the main source of income of about 94 percent of the population. However, non-farm activities are also ubiquitous and usually are used to supplement farm incomes.

The land use in Parigi is mainly characterized by a mixture of rice cultivation on both rain-fed and irrigated rice fields, called *sawah*, dry food crop cultivation on *tegalan* fields and perennial cash crop cultivation in so-called mixed forest gardens or *kebun campuran*. The latter type yields cash crops such as cocoa, cloves, coffee, vanilla, palm sugar, and coconut, some of which are exported. These different land-use types were all cultivated under various landownership agreements. Lack of land ownership is hardly encountered in this upland village, but unequal access to quality land is a common feature.

The local government has tried to stimulate agricultural development in *desa* Parigi through several projects. In 2001 a re-greening project was implemented in the upland *dusun* of Asana to reduce the risks of landslides and increase the level of commercialization of farmers at the same time. Farmers received free *kebun* seeds like cocoa, coffee, rambutan, and durian as well as fertilizers and pesticides from the government. In 2003 a vanilla introduction project was implemented. The government donated the expensive vanilla plants and farmers were instructed how to cultivate it.

Besides economic and political influences the agricultural sector of Parigi was also affected by recent natural processes. Indonesia experienced severe El Niño drought spells between February and April 1997 and in the years following it experienced some lesser El Niño impacts as well, which were also felt by many farming households in Parigi.

A livelihood strategy analysis

The work presented here builds on a methodology developed by Lösch, Fusillier, and Dupraz, which differentiates between household and enterprise strategies. Depending on the asset conditions of people, the institutions, structures, and processes influencing them, and the vulnerability context under which they operate, people will develop livelihood strategies that provide them with the best livelihood outcomes, (cf. Perez Izadi

quoted in Cahn 2002). The type of strategy that was developed is assumed to be directly related to the type of household and its resource base, that is, the socioeconomic position of the household and its life-cycle phase determining its assets, capabilities, and needs (White, Titus & Boomgaard 2002). Livelihood strategies may change as the external environment (over which people have little control) changes (Cahn 2002).

Enterprise strategies may refer to production decisions like intensification or extensification, specialization or diversification, scale or output expansion or reduction, commercialization or subsistence orientation, technological innovation or stagnation.

Household strategies may pertain to the increase or decrease of household consumption expenditures, labor force participation, specialization and/or diversification of income sources, depletion of savings or saving money, borrowing or lending money, and so on.

Despite the fact that the decisions are made by the same people, and that some overlap exists between the two kinds of strategies, there are some trade-offs between the two kinds of strategies which make it interesting to examine them separately. For example, households might reduce their household expenditures in order to expand their enterprise activities or need to sell some of their assets used for their enterprise in order to pay for medical bills.

According to the different sets of strategy criteria used and the households' success in maintaining or improving their livelihoods, their strategies may then be classified as accumulation, consolidation, or survival types of strategies (White 1991); the enterprise strategies could be classified as expansionist-innovating, consolidating-conserving, and marginal-defensive strategies (Lösch, Fusillier & Dupraz 1990).

In our research, all thirty-one sample households of Parigi were individually assigned a specific enterprise and household strategy, whereafter the households were classified into groups according to their enterprise and household strategy combinations. Then in each of these groups a range of responses to the economic crisis have been analyzed. In order to understand these enterprise responses, a number of vital household characteristics have been taken into account such as the social economic status of households, their life-cycle phase, and their main type of resource use or livelihood.

After the households had been classified in terms of the enterprise strategy characteristics of Lösch, Fusillier, and Dupraz (1990) it appeared that twelve households could be classified as having conducted an expansionist-innovating enterprise strategy, fourteen conducted a consolidating-conserving strategy and five households conducted a marginal-defensive type of enterprise strategy. Table 9.1 presents the fourteen households applying an expansionist-innovating enterprise strategy with their respective characteristics and classifications.

Table 9.1 *Households with expansionist-innovating enterprise strategies, Parigi 2003*

HH. Nr.	*SE Group*	*L.C.F*	*Main resource use*	*Enterprise strategy*	*Household strategy*
7	3	2	non-farm	expansionist-innovating	accumulation
1	3	2	non-farm	expansionist-innovating	accumulation
20	3	3	non-farm	expansionist-innovating	accumulation
5	2	2	irrigated *sawah & kebun* without *tegalan*	expansionist-innovating	accumulation
29	3	5	irrigated *sawah & kebun* without *tegalan*	expansionist-innovating	accumulation
18	3	5	rain-fed *sawah & kebun* without *tegalan*	expansionist-innovating	accumulation
4	3	6	non-farm	expansionist-innovating	consolidation
9	2	3	irrigated *sawah & kebun* without *tegalan*	expansionist-innovating	consolidation
6	2	4	irrigated *sawah & kebun* without *tegalan*	expansionist-innovating	consolidation
26	2	5	irrigated *sawah & kebun* & *tegalan*	expansionist-innovating	consolidation
22	1	5	rain-fed *sawah & kebun* without *tegalan*	expansionist-innovating	consolidation
30	3	4	rain-fed *sawah & kebun* without *tegalan*	expansionist-innovating	consolidation

Source: Household survey Parigi, 2003
HH Nr. = Household number, SE Group = Social-economic group, L.C.F = Life cycle phase

The second column represents the socioeconomic group to which the households belonged in 2003. The households were divided into three different socioeconomic groups. Number one represents the lowest socioeconomic group and number three the highest socioeconomic group.

According to the modified classifications based on White (1991) and Ellis (2000) six of these households conducted an accumulation household strategy and the other six had conducted a consolidation household strategy at the same time.

According to Lösch, Fussilier, and Dupraz (1990) entrepreneurs who apply expansionist-innovating enterprise strategies have access to enough resources to accumulate capital. These entrepreneurs usually have access to one or more production factors like capital, land, knowledge, and labor which enable them to produce large surpluses. But, the fact that households with a consolidating strategy are included in this category shows that not all of them are affluent households.

Fourteen of the thirty-one sample household conducted a consolidating-conserving enterprise strategy in 2003. The classifications to which these households belonged and the household strategies they conducted are presented in table 9.2.

Table 9.2 *Households with consolidating-conserving enterprise strategies, Parigi 2003*

HH. Nr.	*SE Group*	*L.C.F*	*Main resource use*	*Enterprise strategy*	*Household strategy*
2	2	4	irrigated *sawah & kebun & tegalan*	consolidating-conserving	accumulation
3	2	5	rainfed *sawah & kebun & tegalan*	consolidating-conserving	accumulation
14	1	2	non-farm	consolidating-conserving	consolidation
17	1	2	non-farm	consolidating-conserving	consolidation
15	3	3	non-farm	consolidating-conserving	consolidation
11	1	6	irrigated *sawah & kebun without tegalan*	consolidating-conserving	consolidation
8	1	2	irrigated *sawah & kebun without tegalan*	consolidating-conserving	consolidation
24	2	4	rain-fed *sawah & kebun & tegalan*	consolidating-conserving	consolidation
23	2	5	rain-fed *sawah & kebun & tegalan*	consolidating-conserving	consolidation
31	2	2	rain-fed *sawah & kebun* without *tegalan*	consolidating-conserving	consolidation
28	1	2	irrigated *sawah & kebun* without *tegalan*	consolidating-conserving	survival
27	2	5	irrigated *sawah & kebun & tegalan*	consolidating-conserving	survival
12	1	4	rain-fed *sawah & kebun* without *tegalan*	consolidating-conserving	survival
21	2	2	rain-fed *sawah & kebun & tegalan*	consolidating-conserving	survival

Source: Household survey Parigi, 2003

Households applying a consolidating-conserving enterprise strategy usually do not have the means to accumulate much capital. The surplus that is generated is mainly needed to continue the entrepreneurial activities. The main aim of the consolidating-conserving strategy is securing the continuation of ongoing activities. Consequently, risk spreading and minimizing is one of the main characteristics of this strategy group.

In total three combinations of enterprise and household strategies are presented in this enterprise strategy group. Two of these households conducted an accumulation household strategy, while eight of these households conducted a consolidation household strategy and five even conducted a survival household strategy. This means that the two households which applied an accumulation strategy had a more advanced household strategy than warranted by their enterprise strategy. In the long run this may cause serious money problems. The four households applying a survival household strategy are doing exactly the

Table 9.3 *Households with marginal-defensive enterprise strategies, Parigi 2003*

HH. Nr.	*SE Group*	*L.C.F*	*Main resource use*	*Enterprise strategy*	*Household strategy*
19	1	3	non-farm	marginal-defensive	survival
13	1	6	non-farm	marginal-defensive	survival
16	1	5	non-farm	marginal-defensive	survival
10	2	4	irrigated sawah & kebun & tegalan	marginal-defensive	survival
25	1	4	rain-fed sawah & kebun & tegalan	marginal-defensive	survival

Source: Household survey Parigi, 2003

opposite. These households are minimizing their household expenditures and using this capital to keep their enterprises running.

In total five households conducted a marginal-defensive type of enterprise strategy. Not surprisingly, all these households also conducted a survival household strategy during the same period. The classification characteristics of these five households are presented in table 9.3.

Entrepreneurs with only a minimal access to resources of land, capital, and knowledge obviously have no other choice than to apply this strategy. They can only focus on the survival of their household members and their activities. In order to survive, these households sometimes even need to resort to sell their assets or borrow money.

In the next section we shall try to unravel the main impacts of the crisis on these different strategy groups as well as the specific responses which they have developed.

Impacts of the crisis on local livelihoods and entrepreneurial strategies

The economic crisis of 1997 mainly affected the peasant society of Parigi through strong changes in market prices. On the one hand the increases in market prices affected farming enterprises positively because market prices, for example of *kebun* export products, increased but on the other hand prices for fertilizers, pesticides. and household consumer goods and services also increased, which had a negative effect. Tables 9.4 and 9.5 show the major changes in market prices for agricultural products and inputs during the period 1997-2003.

The economic crisis affected the farmers' livelihood strategies in many different ways. According to Angelsen and Resosudarmo (1999) the effect on their livelihoods depended on their vulnerability which was mainly determined by three factors; types of crops planted, size of holdings, and available alternative sources of income.

Table 9.4 *Prices (in Rupiah) for kebun, sawah, and tegalan products in 1997, 1999, and 2003*

		1997	*1999*	*2003*
Coffee	per liter	5,000	6,500	3,750
Cocoa	per liter	3,000	10,000	3,500
Patai	per kilogram	1,500	7,000	4,000
Rambutan	per kilogram	1,500	10,000	5,000
Vanilla	per kilogram	20,000	125,000	165,000
Banana	per bunch	650	1,750	1,125
Rice	per liter	1,300	2,250	1,450
Soybeans	per liter	200	4,000	1,850
Corn	per liter	500	750	1,000
Peanuts	per liter	500	7,000	4,500
Cassava	per ten pieces	100	2,250	1,000

Source: Interviews with traders, Parigi 2003

Table 9.5 *Average prices (in Rupiah) for fertilizers in rupiah in the area of Parigi*

Fertilizers	1997	1999	2003
Urea	18,000	30,000	78,000
STS	7,500	15,000	80,000
K	20,000	25,000	105,000
ZA	12,000	15,000	65,000

Source: Interviews Bulutana, 2003

This section of the chapter will focus on the main enterprise responses of the households in *desa* Parigi when confronted with the economic crisis. This will be done by looking at the main enterprise responses as summarized by Mula (1999). According to Mula, households which are confronted with crisis situations may take resort to the following responses in their entrepreneurial behavior:

– commercialize their production or retreat into subsistence production,
– intensify or extensify their production by increasing or decreasing the use of labor, capital, or land,
– specialize or diversify their enterprise activities and production.

Commercialization and subsistence production

Because prices for export crops during the onset of the economic crisis increased more than prices for crops for the local market, export-oriented farmers could be expected to have gained, whereas farmers producing for local markets might have been worse off (Angelsen & Resosudarmo 1999).

This was also the case in *desa* Parigi were export crops are mainly produced in the *kebun* system. Despite the fact that the prices for *kebun* export crops had begun to decline slightly after the crisis reached its peak in 1999, *kebun* prices were still much higher than before the onset of the crisis and also were much higher than prices for other agricultural crops.

Market changes were anticipated by intensifying the production of commercialized *kebun* crops like cocoa, coffee, rambutan, durian, and mango and by diversifying the production of *kebun* crops by introducing new crops such as vanilla.

Overall it can be said that the economic crisis has increased the level of agricultural commercialization in Parigi. Almost all the households were able to increase their *kebun* production. Even some households which applied marginal-defensive enterprise strategies were able to increase their investments with money generated by non-farm wage-work activities or with seeds supplied through the re-greening project.

Other households which applied marginal-defensive enterprise strategies however, were not able to increase their investments in the kebun, because they simply could not raise the money or because their time was mainly spent on non-farm wage-work activities of a survival type.

Sample households only retreated into subsistence production when non-farm activities had become their main source of income and farm activities were just a way to supplement their household food source. So contrary to Mula's (1999) hypothesis, increasing subsistence production was not a very common coping response among the sample households.

The economic crisis did not only raise the level of commercialization of the farm activities of households, but also the commercialization level of their non-farm activities. Households, which already owned non-farm enterprises before the crisis, anticipated the market changes by expanding their trading or merchandising activities or by starting new non-farm activities, shops or rice-processing sheds. These households all belonged to the highest socioeconomic group and applied an expansionist-innovating enterprise strategy in combination with an accumulation household strategy.

Other households which did not yet own non-farm resources also started to engage in non-farm activities in response to the economic crisis. In some of these cases households which applied expansionist-innovating or consolidating-conserving enterprise strategies could benefit from the rising market prices for *kebun* products and decided to reinvest these profits into new non-farm enterprise activities, like opening a small shop. It seems therefore that on the one hand profits generated by farm activities were reinvested into non-farm activities, while on the other profits generated by non-farm activities were reinvested into farm activities.

Intensification and extensification of production

As already mentioned above, commercialization of production in *desa* Parigi was often accomplished by intensifying production in the *kebun*. According to Angelsen and Resosudarmo (1999) intensification of production (farm or non-farm) can be seen as a response to both high vulnerability and low vulnerability. When confronted with economic crisis conditions households might either intensify their production in order to benefit fully from the rising market prices for export crops or extensify in order to counter the rising prices for inputs and consumer goods (i.e., wages).

In *desa* Parigi households indeed intensified their farm production as a response to the economic crisis. Despite the fact that it is normal for farmers to respond to changes in market prices, many of the changes through intensification and commercialization in *desa* Parigi could be seen as a crisis response. This is corroborated by the fact that the economic crisis influenced the prices more than normal market fluctuations.

Overall, the less vulnerable households in *desa* Parigi tried to intensify their production. The economic crisis created market opportunities for farmers and almost all the sample households were able to anticipate these market opportunities by intensifying their production.

However, as already mentioned market prices for capital inputs like fertilizers and pesticides also increased dramatically. As a response some households belonging to the marginal-defensive strategy group were not able to intensify their production. In some cases these households even had to engage into non-farm activities in order to keep buying the same amount of capital inputs for their land. In two cases households even saw their farm output decrease because they could no longer afford to buy sufficient farm inputs.

In spite of these exceptions it would appear that almost all the sample households were able to intensify their farm production. On average output increases were mainly generated in the *kebun* land-use system due to the fact that market prices for *kebun* products increased more than market prices for products produced in the *sawah* and *tegalan* land-use system. Intensification in the *kebun* was mainly achieved by increasing the use of capital inputs. But *kebun* areas have only seldom been expanded in *desa* Parigi. Only three very rich households that applied expansionist-innovating enterprise and accumulation household strategies could expand their *kebun* area. The lack of area expansion can be partly explained by the fact that, unlike with rice production, the output can be easily increased by modest increases in the use of inputs and by boosting the cropping density.

Intensification through the increased use of labor was only applied by households with expansionist-innovating enterprise strategies and by some households with consolidating-conserving enterprise strategies. These households increased their use of external labor which was mainly used in their non-farm enterprise activities. However, households noted that the *kebun* land-use system is quite labor extensive as labor is only needed to plant the *kebun* trees and during the harvest season. The *kebun* also needs little maintenance when the trees are mature. Some households which applied marginal-defensive enterprise strategies, however, even reduced their investments in the *kebun*, because they simply could not raise the money or because their time was mainly spent on non-farm wage work to cover their subsistence needs.

The majority of households also intensified their production in the *sawah* land-use system during the 1997-2003 period, although to a lesser extent than in the *kebun*. The use of capital inputs such as fertilizers and pesticides for example increased in the *sawah*, and in some cases households which applied an expansionist-innovating enterprise strategy were even able to expand their *sawah* areas. Households which applied a consolidating-conserving or a survival strategy were less able to intensify their production in the *kebun* and the *sawah* systems at the same time mainly due to a lack of capital. When households were forced to choose, they usually preferred to intensify their production in the *kebun* because it could generate more profits and needed less labor. Despite the fact that *kebun* land could now generate more profits than *sawah* land, the latter was still highly valued as a security investment by households that applied expansionist- innovating enterprise strategies. These households also reinvested their profits generated in the *kebun* through rising market prices by buying more *sawah* land.

The *tegalan* land-use system, which in its purest form is only represented in the *dusun* of Asana, was not much affected by the economic crisis, because *tegalan* crops, which mainly supply staple food for the local markets, did not fluctuate much in value. In fact, the *tegalan* area might even have declined, because some households started using their *tegalan* land for the production of *kebun* crops. Only one of the sample households increased its production of *tegalan* crops for subsistence purposes in order to reduce their consumption expenditures on food.

Besides the intensification of farm production, non-farm production also intensified as a result of the economic crisis. Especially households that already owned non-farm trading activities were able to intensify these activities because the farmers tented to intensify especially their commercialized production. Trading activities are mainly employed by households that apply expansionist-innovating enterprise and accumulation household strategies and in some cases by households that apply a

consolidating-conserving enterprise strategy and a consolidation household strategy.

So it seems that farm intensification has increased as a response to the economic crisis within all enterprise strategy groups, although with some exceptions for households that applied marginal-defensive enterprise strategies. Quite remarkably, farm intensification in *desa* Parigi was mainly achieved by increasing capital inputs. Only the more affluent households that applied expansionist-innovating or consolidating-conserving enterprise strategies could increase their farm and non-farm production by expanding their cultivated area, the use of external labor input, and/or the scale of their non-farm activities.

Diversification and specialization

Besides commercialization and/ or intensification of their production, households which are confronted with crisis conditions may also diversify or specialize their production. Once again these responses can be seen as both a response to increased vulnerability or to decreased vulnerability. According to Mula (1999) diversification of enterprise activities is more often a strategy used by better-off households due to the capital needed.

In our research, enterprise diversification was defined as focusing the production effort on more types of resource use at the same time. This can be observed when a household uses more capital and/or labor inputs in different types of activities or for different types of crops.

As already mentioned before, almost all the sample households were able to increase their capital inputs in the *kebun*. Especially high-status households which applied expansionist-innovating enterprise strategies were able to diversify their *kebun* production by cultivating new and very lucrative but expensive crops like *petai* (Parkia speciosa which are smelly green beans) and vanilla. In other cases lower status households were able to diversify their *kebun* production with less expensive crops thanks to support given by the government through the re-greening project. Especially households residing in the *dusun* of Asana were given the means to diversify their original *tegalan* system as a result of this project.

Households also increased their capital inputs in non-farm activities as a response to the economic crisis. Better-off households applying expansionist-innovating enterprise strategies were able to start new non-farm activities thanks to profits generated by their farm activities or other non-farm activities, due to changing market prices. These households opened new shops, rice processing sheds and started new trading activities. Some households with consolidating-conserving enterprise strategies were also able to start small-scale trading activities or open a

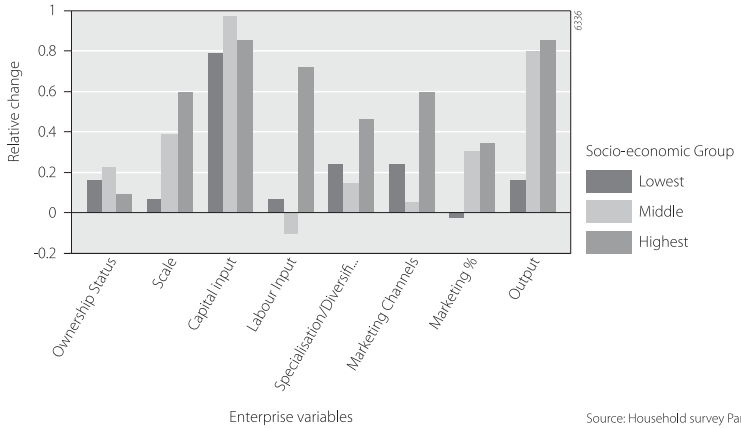
shop. Even two households with marginal-defensive enterprise strategies had started small shops. In one case this household started a shop thanks to the windfall profit it could generate in its farm enterprise during the economic crisis. Another household started a shop as a coping response – not to the economic crisis but as a response to old age. This couple became too old to work the land and opened a shop in order to generate a much-needed income. So it seems that enterprise diversification is not only used as a way to increase profit, but sometimes also as a necessary change in order to survive.

The majority of sample households diversified their enterprises by intensifying their production in the *kebun* and in the *sawah*, and sometimes also in their non-farm activities at the same time. Specialization in the *kebun* was mainly applied by households which belonged to the consolidating-conserving enterprise and the consolidating household strategy groups, as well as the households which belonged to the marginal-defensive enterprise strategy group. Because households wanting to diversify their enterprise activities needed more capital investments, the higher-status households were more inclined to diversify their enterprises. High-status households in particular were also more inclined to intensify their non-farm activities. These households did so by applying an expansionist-innovating enterprise strategy, that is, by shifting labor and investments to these non-farm activities.

On average, households conducting expansionist-innovating enterprise strategies also were better able to diversify their enterprise activities by intensifying their production in more than one type of resource use at the time. Households which applied consolidating-conserving and/or marginal-defensive enterprise strategies were less able to intensify the use of capital inputs in more than one type of resource use due to the lack of capital. Thus specialization in the *kebun* was mainly applied by households with consolidating-conserving and marginal-defensive types of enterprise strategies.

In compliance with Mula (1999) enterprise diversification in *desa* Parigi was not only applied by better-off households and can thus be seen as a response reflecting a low level of vulnerability. However, there are also some exceptions as some poorer households were only able to diversify their productive activities thanks to government support. In one instance a household even used production diversification as a survival technique which therefore, in this case can also be seen as a response reflecting a high level of vulnerability. Figure 9.1 presents an overview of the productive coping responses of households by socioeconomic group, by measuring the changes in enterprise variables between 1997 and 2003. It clearly shows that in nearly all cases and household categories responses have been positive, but especially so among the highest and middle group household.

Figure 9.1 *Changes in Enterprise Variables 1997-2003: Socio-Economic Classification*



Source: Household survey Parigi, 2003

El Niño

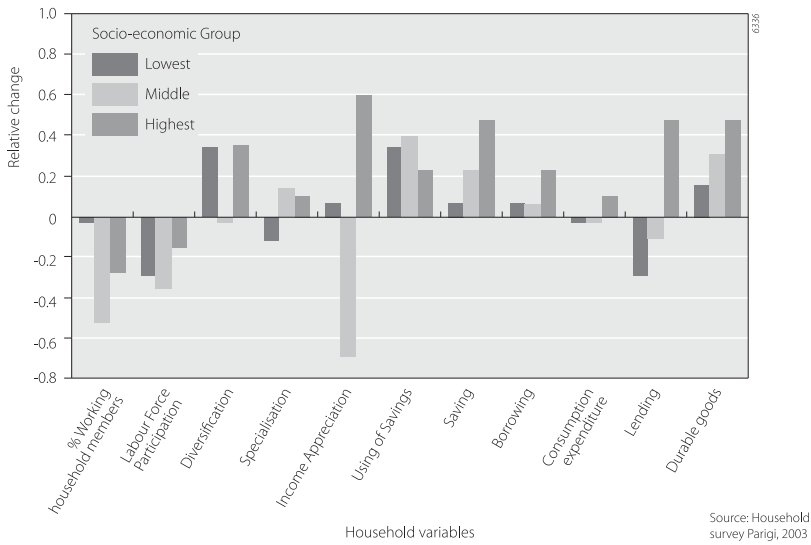
In addition to the economic crisis the peasant society of Parigi was also affected by several El Niño drought spells during the 1997-2003 period. In general the sample households were more strongly negatively affected by El Niño than by the economic crisis conditions. Moreover, it seems that especially households residing in the *dusun* of Asana were affected as a result of the lack of irrigation facilities, so that newly planted *kebun* trees and rain-fed *sawah* land suffered the most. Especially the households which applied marginal-defensive enterprise strategies and the less profitable households which applied a consolidating-conserving enterprise strategy were affected by El Niño. These households were less able to replace the plants and trees that died during the El Niño drought and therefore were likely to experience a relatively strong decline in their farm incomes. In accordance with Tiffen's theory (2002) the households without non-farm income sources in this group were especially vulnerable to a decline in income. In some cases, however, households noted that in spite of their losses during El Niño, they did not experience a real decline in total profitability because the prices for their products increased during the economic crisis. In these cases the positive effects of the economic crisis were able to nullify the negative effects of El Niño. However, this was only possible when the households still had enough productive *kebun* land at their disposal to compensate for the drought losses on *sawah* and/or *tegalan* fields.

Impacts of the economic crisis on household strategies and social structures

The economic crisis of course did not only affect the productive activities of the households, but also their consumptive behavior. As already mentioned above, the economic crisis has affected both the market prices of export crops as well as the prices for consumer goods and services. Households responded to these price changes by making adaptations in both their enterprise and household expenditures. Depending on whether the household profited or suffered from the economic crisis, it could either, increase or reduce its expenditures and/or change its income sources.

In this section the main household responses to the economic crisis encountered in *desa* Parigi will be analyzed for a series of variables directly affecting the household's capacity for consumption. First the changes in their income generating activities will be discussed by looking at the conditions and reasons for the diversification of their income generating activities. Second, we shall deal with other strategies to increase the household income, like borrowing, lending, using up of savings, saving money and increasing labor participation and thirdly, we shall focus on the changes in household expenditures and the reasons behind these changes. Figure 9.2 presents the relative frequencies of the household responses on these variables for the three socioeconomic categories.

Figure 9.2 *Changes in Household Variables 1997-2003: Socio-Economic Classification*



Income diversification

In *desa* Parigi many households responded to the economic crisis by increasing their level of income diversification. Both the households that profited and those that suffered from the economic crisis responded in this way.

Households that did not own enough land and already applied marginal-defensive enterprise and survival household strategies were usually not able to counter the rises in consumption prices with increases in profits. These households were forced to diversify their income sources by seeking wage-work activities in order to supplement their income. Many found jobs as a seasonal worker on someone else's land, as a lumberjack, or in construction.

Households with much land that applied expansionist-innovating enterprise and consolidation or accumulation household strategies usually were able to profit from the economic crisis and therefore used income diversification as a way to reinvest profits.

So it seems that especially households without much land that were employing a survival strategy were forced to take resort to non-farm activities as a means of supplementing the shortfalls in farm incomes resulting from crisis conditions. To the more affluent farmers who were applying consolidation or accumulation strategies, non-farm activities offered a way of increasing their relative wealth.

The reasons behind income diversification did not only differ between the various strategy groups; the types of activities they deployed differed as well (Tiffen et al. 2002). Households applying an expansionist-innovating enterprise strategy and an accumulation household strategy more often diversified their income sources through non-farm business activities (trading, merchandising, rice processing), whereas households which applied less advanced strategies more often diversified by means of casual wage work.

Use of savings and selling of assets

Income diversification is not always sufficient to cope with a decline in average income as a result of the economic crisis. Another possible coping response is the use of savings or the sale of assets in anticipation of better times (Warr 1999).

The use of savings was most often resorted to as a coping mechanism by households with consolidating-conserving enterprise and survival household strategies and to a lesser extent by households that applied marginal-defensive enterprise and survival household strategies.

Households which applied marginal-defensive enterprise and survival household strategies also used some of their assets and savings, but this

group of households already had fewer assets at its disposal. The reasons why these households needed to sell assets was not always directly related to the economic crisis, but also to life-cycle conditions. The economic crisis may nevertheless have affected their economic position to such a degree that they were forced to sell or pawn some of their assets when confronted with their increasingly pressing personal conditions. In other words, the economic crisis affected them indirectly by aggravating their already weak economic situation. On the other hand, none of the households which applied expansionist-innovating and accumulating household strategies used any of their savings. On the contrary, these households even were able to increase their savings and buy more assets due to the windfall profits that the crisis generated among this group.

Borrowing money

When confronted with crisis conditions households may turn to relatives or other people in their community for assistance. Kutanegara and Nooteboom (2002) observed little in the sense of increased sharing of risks and helping others in times of need. They concluded therefore, that most households were forced to carry the burden of the crisis by themselves (see also Lont & White 2003).

In *desa* Parigi borrowing money for household purposes was not mentioned very often by the sample households. However, it also became clear that households were reluctant to admit that they had been borrowing money and in reality, therefore, borrowing money may well have been a more common coping response than households were willing to admit.

Some households that applied expansionist-innovating enterprise and accumulation household strategies admitted that due to the economic crisis more people asked them for loans and, because their profit increased, they were able to grant more loans.

Money for household purposes was usually borrowed from family and sometimes, when a household was confronted by financial difficulties, their children would be taken in by better-off family members. However, it also became apparent that social networks in Parigi eroded due to progressing commercialization in conjunction with the crisis. Overall households indeed were forced to carry the burden of the crisis themselves, as was mentioned by Kutanegara and Nooteboom (2002).

Use of labor

Another way to cope with income reduction is to increase household labor participation. Research suggests that this is especially the case

among women and young people in an effort to maintain income levels (Warr, 1999).

Against the expectation of Warr (1999), the increased use of household labor was a coping response that was hardly encountered in *desa* Parigi. Only one household with an expansionist-innovating enterprise and an accumulation household strategy increased its external labor input after it expanded its non-farm enterprise activities in response to the economic crisis. All the other changes in the use of labor were directly related to the life-cycle phase of the households in question. However, during the research only the number of laborers and the total labor force participation in the households were examined and not the number of hours these individuals worked. Due to this imperfection it is still possible that households that wanted to increase their labor input but did not have the means to hire external laborers had increased their own labor input with the same number of family workers.

Changing household expenditures

Besides increasing the household income by diversifying income sources, borrowing money, selling assets, and increasing labor input, households also responded to the economic crisis by changing their household expenditures.

Setiawan (2001) noted that households that were confronted with declining incomes usually responded by minimizing expenditures, cutting back on less essential goods, changing dietary habits, and eating more of their own crops (Setiawan 2001).

In *desa* Parigi quite a few households made adjustments in their household consumption expenditure patterns during the period 1997-2003. However, caution should be taken when linking these changes to the economic crisis. The majority of changes were related to the life-cycle phase conditions of the households and the resulting increases or decreases in household size, and school attendance of their children. However, in some cases the changes in household consumption expenditures were also related to conditions created by the economic crisis itself.

Reduction of the household consumption expenditures as a response to the economic crisis mainly occurred in households which applied marginal-defensive enterprise strategies and survival household strategies. These households sometimes reduced their consumption expenditures by eating more of their own crops, and by buying fewer or no luxury food items, such biscuits and fish. One household was even forced to take its children from school due to the economic crisis. In accordance with Warr's (1999) observation, however, taking children from school due to the economic crisis conditions was not very common in

desa Parigi, but the phenomenon was not altogether absent either. Before drastic steps were taken, such as taking the children from school, households would first have tried to cope by using some of their savings or by borrowing some money.

On the other hand, households which applied expansionist-innovating enterprise strategies and accumulating household strategies were usually able to increase their household expenditures. They often did so by buying considerable quantities of quality food and expensive durable consumer goods, such as cars, motorcycles, and television sets from the extra profits generated by their enterprises during the peak of the crisis period. However, after this bonanza period most of these households had to reduce their expenditures again on expensive goods. None of these households, however, needed to reduce their consumption expenditures out of necessity.

The group of households which applied the consolidating-conserving household strategy experienced both positive and negative influences from the economic crisis. Some households discovered they found it difficult to continue buying the necessary household consumer goods and others saw the profitability of their enterprises increase. The majority of these households, however, did not need to economize very much.

Finally, only few of the households belonging to the less expansionist/affluent strategy groups were ever able to buy durable consumer goods (see figure 9.2).

The impact on social relations

Because households were all affected differently by the economic crisis the social structures could also have changed at *desa* level. Braudel (1979), cited in White, Titus and Boomgaard (2002), already noticed that: "Economic and political crises always result in a "redistribution of the cards, held by different players".

In *desa* Parigi, as in any Macassarese village, there was a clearly stratified social structure before the onset of the economic crisis. There were households with a higher socioeconomic status, and households with a middle and low socioeconomic status.

In a peasant society like Parigi's, the socioeconomic status of a household is largely determined by the quantity and quality of the land and cattle people own. Owning land offers households the strongest base for their socioeconomic status, due to the fact that they can make independent decisions and keep all the profit from their efforts. Sharecropping land out also has a relative high status due to the fact that the manual work is done by others. Renting land has the lowest status because it involves dependency and a high level of uncertainty. The right

to rent land can always be withdrawn by the landowners (cf. Jay 1969; Rössler 1997; Doekes 1997).

Beside ownership of land and cattle, the socioeconomic status of households is also determined by kinship relations, political influence, and the level of education. Nowadays the socioeconomic status of a rural Macassarese household is still very much determined by their land ownership, but other aspects of the household have become equally or even more important. Due to the commercialization of the rural economy, ownership of non-farm trading activities contributes highly to the socioeconomic status of a household, as well as having a higher level of education or offering your children a higher education. Having a family member with a higher-status occupation also contributes to the socioeconomic status of the household.

In this research the socioeconomic position of a household was determined by scoring on a whole range of variables, that is, education level, income position, occupational status, presence or absence of *Hajji* status, diversity of income sources, control of means of production/quality/type of land, cattle, machinery. All these aspects determine the social positions of households in a society and consequently also their ability to pursue successful livelihood strategies.

The social relations between households with a high and low socioeconomic status in Parigi often are characterized by a patron-client system. In this system the low-status clients *(anaq anaq*) can turn to a high-status patron *(punggawa*) for protection and help. In return the client will repay him by offering certain services, such as working on his land or political support. This association with a patron takes place on a voluntary basis. Through such an association with a patron the status of both patron and client will rise (Tol, Van Dijk & Acciaioli 2000).

This social structure might change due to the economic crisis if the impact of the economic crisis differed between these households. Some households might have benefited more then others and in doing so might be able to improve their socioeconomic status as others might suffer during the economic crisis and thus reduce their socioeconomic position in the village. Social mobility as a result of the economic crisis might differ between the households and consequently socioeconomic structure in the *desa* might change correspondingly.

However, it is very unlikely that the economic crisis could alter the patron-client system on the short term. Socioeconomic structures as such are embedded into society and will not change rapidly. This does not mean however, that within the patron-client system the position of the people involved might not change at all. Some relatively poor farmers mentioned that as a result of the economic crisis their socioeconomic position had improved slightly. However, because the majority of higher status households were able to improve their socioeconomic po-

sition even more during the crisis, the relative position between these two household types did not really change, despite the fact that for both their socioeconomic status had improved.

There seemed to be a strong relationship between the socioeconomic status and the enterprise strategies conducted by the sample households. Households which conducted an expansionist-innovating enterprise strategy belonged mainly to the highest socioeconomic group. Households which conducted a consolidating-conserving strategy mainly belonged to the middle socioeconomic group and households which conducted a marginal-defensive enterprise strategy mainly belonged to the lowest socioeconomic group. Despite this strong relationship it is not a deterministic one as the socioeconomic status of the households varied also within each strategy group and the household's status may shift during the crisis.

In the context of *desa* Parigi the majority of the sample households were able to benefit from the economic crisis. However, the more affluent and higher status households were still able to benefit the most while the less affluent households benefited the least, or were even hit by the economic crisis. When looking at the social mobility only two of the thirty-one sample households did not experience any changes in their socioeconomic status between 1997 and 2003. The majority of the households improved their socioeconomic status, which would suggest considerable social mobility between the groups. It can be observed that households which applied expansionist-innovating and consolidating-conserving enterprise strategies could improve their social economic status, while households which applied marginal-defensive enterprise strategies remained in the same position or even decreased their social economic status slightly. Households which applied an expansionist-innovating enterprise strategy and an accumulation household strategy were best able to improve their socioeconomic status. The household that improved its social-economic status the most applied an expansionist-innovating enterprise and a consolidation household strategy. Box 9.1 presents a description of how this household was able to achieve this.

Households that applied an expansionist-innovating enterprise strategy and an accumulation household strategy were able to reinvest their profits made during the economic crisis in both farm and non-farm enterprises, and some of them could even establish new non-farm enterprises. In doing so, some of these households even created new monopoly positions in the area. These new monopoly positions are influencing existing social structures and social relations in a way that is still unfolding today. Because the already wealthy households were able to establish these monopolies, social polarization could advance as well by using their socioeconomic power to exploit the poorer farmers. However, these new businesses may also have created employment opportu-

Box 9.1: An example of high social mobility

A household that conducted an expansionist-innovating enterprise strategy and a consolidation household strategy is the only one in the sample that rose from the lowest socio-economic rank in 1997 to the highest socio-economic rank in 2003. This is a large accomplishment considering that this household's main income source consisted of the relatively less profitable rain-fed *sawah* with a small *kebun* and without *tegalan*, while this household also resided in the less accessible *dusun* of Asana.
This household's high social mobility can be explained by the fact that it had diversified its

nities for households with a lower socioeconomic status and thus enabled these households to maintain or improve their socioeconomic position.

On the other hand, the economic crisis also helped to reduce some monopolistic positions. The increased level of commercialization in *desa* Parigi attracted more traders to the area, even to the relatively isolated *dusun* Asana. Farmers now were able to choose to which trader they wanted to sell their products. Some farmers were able to benefit from this increased competition between traders as their bargaining position improved correspondently. However, very poor farmers were still not able to improve their bargaining position as they were bound to traders who borrowed them the starting capital they needed to buy capital inputs for their cash crops. These farmers still were forced into contracts that minimized or even diminished their options for improving their socioeconomic position in the village.

It should be noted, however, that these social relations also enabled relative poor farmers suffering from the economic crisis, to buy inputs which they otherwise would never have been able to use. Thanks to institutions like *kapital bagihasil* and patron-client relations, poor farmers were also able to receive loans when no bank would grant them one, or to sharecrop some of their land when they needed some extra income.

Therefore, it can be concluded that although on the whole, the social hierarchy remained the same, in some cases the gap between the highest and the lowest status households deepened, while it tended to diminish between the middle status and the highest status households. Social relations like the patron-client system might have changed slightly, but surely did not disappear. It can even be said that this ancient social system enabled the poor households suffering from the economic crisis to continue their enterprise activities and/or at least to survive as a household.

Conclusions

As a general conclusion it should be noted that the economic crisis has affected *desa* Parigi in many different ways. On the whole the economic crisis mainly created new opportunities as the majority of the peasant population was able to benefit from it, but it also brought shocks and stresses for vulnerable households, which were not always able to cope with them. Households with expansionist-innovating or consolidating-conserving enterprise strategies mainly applied positive coping responses by anticipating the market changes, whereas households which applied marginal-defensive enterprise strategies were mainly forced to apply negative coping responses just in order to buy enough food.

When confronted with opportunities or shocks and stresses, households on the whole gave priority to the development of their enterprise strategies, sometimes at the expense of their household strategies. In some cases, households applied similar enterprise and household strategies and in other cases they applied a less advanced household strategy in order to reinvest most of their money in their own enterprises. This was especially the case with households which applied a consolidating-conserving enterprise strategy and a survival household strategy and to a lesser extent also with households which applied an expansionist-innovating enterprise and consolidation household strategy. Two of the sample households did exactly the opposite however, by investing more in their household strategies and selling some of their production means in order to increase their household consumptions. In doing so, they will of course reduce the profitability of their enterprises in the long run.

The economic crisis has also affected the resource use systems in the village area. In general the farmers increased their focus on the production of commercialized kebun products and intensified their overall production. Non-farm enterprise activities also expanded and more households resorted to non-farm income-generating activities. However, farmers noted that market prices for some export *kebun* products were no longer as high as they were during the peak of the economic crisis (1997/1998) and in some cases these commodities were already decreasing in value. So it seems that the positive impact of the economic crisis had already diminished in 2003. Some wealthy farmers were responding to these new market changes by focusing their attention on new products with a higher market value, like the lucrative vanilla crop. However, it usually takes several years before they can harvest the fruits of their labor and before that time elapsed market prices might have changed again.

Overall it can be concluded that the economic crisis has also affected the household strategies. Households applying expansionist-innovating enterprise strategies usually also were able to increase their household

expenditures because they could increase the profitability of their enterprises. Their household strategies therefore, were mainly indirectly affected by the economic crisis. This group of households in particular benefited from the rising prices for export crops and in doing so increased their standards of living by buying consumer durables, investing in farm and non-farm activities and by increasing their household consumption expenditures.

Sometimes the crisis impact was direct, as was the case with households applying a marginal-defensive type of enterprise strategy, which could no longer afford the necessary capital inputs and therefore were forced to diversify their income sources in order to buy these inputs. Some of these households suffered so much from the impact of the economic crisis that they had to drastically reduce their expenditures on consumer goods, deplete their savings and sometimes even take their children from school.

The group of households which applied a consolidating-conserving household strategy experienced both positive and negative impacts from the economic crisis. Some households discovered they found it difficult to continue buying the necessary capital inputs and household consumer goods while others saw the profitability of their enterprises increase. The majority of these consolidating households however, did not need to economize very much.

As the economic crisis has changed both the enterprise and the household strategies, it indirectly also affected the social relations in *desa* Parigi. Despite the fact that the majority of the households was able to benefit from the economic crisis, those with the highest social economic status were able to benefit the most, while those with a very low social economic status benefited the least, or even were hurt by the economic crisis. A redistribution of the cards held by the different players however, did not yet occur in Parigi.

The sample households can be classified into those which had the means to anticipate the rising market prices and in doing so were able to benefit substantially without being adversely affected by the rising prices for inputs and consumer goods, and those which did not have the means to anticipate the rising market prices and consequently were directly hurt by them. Households which did have the means to anticipate market changes mainly applied an expansionist-innovating or a consolidating-conserving enterprise strategy, whereas households which did not, mainly applied marginal-defensive enterprise and survival household strategies. In general it can be concluded that only households which could ride the waves of the ever-changing market prices were able to harvest a profit, while those who were not, barely survived and sooner or later may even go down. The economic crisis can be seen as just one of many waves farmers have to ride, although a particularly large one.

10 The Asian Crisis, Livelihood Conditions, and Resource Use in the Coastal Village of Tamasaju, South Sulawesi

Rogier Vogelij

Introduction

Based on research performed in 2003, this chapter investigates the effects of the Asian crisis of 1997 on livelihood strategies and resource use in the village of Tamasaju, South Sulawesi. The main aims of the research were to gain insight into how households with different types of livelihood strategy, resource use, age structure, and different levels of wealth coped with the crisis.

This chapter highlights the changes that occurred in different resource use sectors and livelihood strategies, using the livelihood approach of Lösch, Fusilier, and Dupraz (1991). This approach distinguishes between enterprise strategies and household strategies. Both types are strategies that are used by households. Enterprise strategies refer to the strategies that they follow in their productive pursuits, whereas the household strategies are strategies that appliy to consumption purposes, the use of the household's labor, and saving and borrowing (in cash or in kind). The three categories that can be distinguished in the consumptive sphere are accumulation, consolidating and survival strategies. Enterprise strategies, on the other hand, apply to a households' entrepreneurial activities, and usually are defined by the use of inputs, the use and ownership of production assets, and the use of savings and loans for productive purposes. The three categories of enterprise strategies are expanding-innovating, consolidating-conserving, and marginal-defensive strategies.

In our paper, the emphasis is on the productive activities of households, but consumptive behavior was also taken into account. As households in Tamasaju actively use various types of resource, very different types of dynamics have been taking place. Moreover, it turned out that prevailing social relationships (box 10.1) have played an important role in softening potentially detrimental effects of the crisis. Before analyzing the effects of the crisis any further, we will first discuss the research village and its economy.

Box 10.1: Patron-client ties

An important feature of Macassarese culture is patronage relationships. Patrons, or *punggawa*, support their clients in times of hardship in return for services, labor, or agricultural products. *Punggawa* help their clients by employing them, by providing loans, or by providing inputs. The patron-client relationship is based more on practical considerations rather than on loyalty; a client will commit to another *punggawa* if the relationship is not to his satisfaction. As losing clients means losing status, *punggawa* will try to maintain strong ties with their clients, often by means of lending money. As long as a client is in debt, the commitment cannot be broken (Pelras 2000). Unlike a bank, patrons do not ask for collateral or interest, but they receive a share of the clients' output, or clients pay by supplying labor. These relationships can therefore be instrumental in improving access to financial assets for poor people, while they can also be powerful tools of exploitation and marginalisation.

The village economy

Tamasaju is located about 10 kilometers south of the provincial capital Makassar, and is easily accessible by road and public transportation. The population of Tamasaju, about 4200 in number, is made up exclusively of ethnic Macassarese[1] (BPS Kabupaten Takalar 2003, p. 39). The Macassarese are renowned throughout Indonesia for their seafaring history (Kristanto et al., p. 387). They form a society where Islamic beliefs and traditional *adat*[2] are intertwined (Koentjaraningrat 1975). Status and family ties are important aspects of their daily life. Social status is determined by blood relationship, courage, wealth, education, and occupation. Being a *hajji* is also an important indication of status. Status is not a predetermined fate that never changes; it is possible to acquire more status, or conversely to fall into disgrace. People are therefore very competitive in acquiring status.

Fishing is the most common type of resource use in Tamasaju, as about 50 percent of the households depend on fishing for their main source of income. An estimated 25 percent of the households engage in agricultural and non-agricultural activities for their main source of income.[3]

In Tamasaju, where primary activities make up the lion's share of the local economy, weather conditions are an important feature of everyday life. While insufficient rainfall places constraints on agriculture (box 10.2), winds are a limiting weather condition for some types of fishing. During the wet season strong winds often cause the sea to be choppy,

Box 10.2: Tamasaju and its environs

Tamasaju is located in the alluvial plain of the Jeneberang River, on the west coast of South Sulawesi (see map 2). This province is one of the most densely populated areas of Indonesia. About 20 kilometers north of Tamasaju is the provincial capital of Makassar. With a population of almost one million (BPS 2001) and, as home to the main port of eastern Indonesia, it is a large source of employment, trade, and economic demand.

Gunung Lompobatang, a dormant volcano situated about 100 kilometers inland, has provided fertile soils for much of the surrounding area, including Tamasaju. Because of the high fertility and the absence of relief, soils here are very suitable for agriculture. However, the lack of rainfall hampers agriculture during the dry season. Irrigation is therefore needed during much of the year. The main source of irrigation water for Tamasaju, the Jeneberang River, is not very reliable, as the amount of water varies greatly from year to year, and from month to month. A large dam, the Bili-Bili Dam, was built for the purpose of improving irrigation facilities and supplying drinking water. Because of these efforts, irrigation facilities have improved significantly. However, the urban demand for water has a more potent voice, and a large share of the water is used up in Makassar. Because of this, irrigation is insufficient, and most of the agricultural land of Tamasaju is still completely dependent on rainfall.

thereby making fishing more hazardous. Different types of fishing are affected in different ways, however. Some types of fishing are virtually impossible to perform in the wet season, while other types of fishing can continue near Tamasaju all year round.

Fishermen who use the *pa'renggae* technique have to avoid the dangerous weather conditions during the wet season, and go to the extreme south and southeast of the peninsula, where winds are less strong (Egal, 1997, p.12). *Pa'renggae* boats are the largest type of fishing boat in Tamasaju; they have crews of ten to fifteen people, most of whom are from Tamasaju (although some of them come from nearby villages). The starting investments are extremely high, around Rp 100 million,[4] because of the size of the boats, the large nets, and the three engines required in this fishing method (two for thrust, and one to pull in the net).

Up to three years ago, *pa'renggae* boats were still active in the coastal area of Tamasaju, but because of overexploitation due to the large number of fishermen in this area, most *pa'renggae* now go to Jeneponto or Sinjai

Figure 10.1 *Map of South Sulawesi*

(see figure 10.1), or even to Flores and Sumba. At the time of the research, it was estimated that ten vessels from Tamasaju used *pa'renggae*.

The *pa'rere* technique is another fishing technique that is relatively new to Tamasaju. The starting investments are considerably lower than for *pa'renggae*, ranging from Rp 30 to 40 million for a boat with two thrust engines, one net-pulling engine, and a net. The boats have a crew of five to six men, which makes it a more attractive method of fishing for sailors (*sawi*) than *pa'renggae*, because the catch, which can be about as large as that with *pa'renggae*, is divided among fewer people.

Boats using the *pa'rere* method of fishing operate around the island of Pulau Tanah Keke in the Spermonde Archipelago (map 2). Since about five years ago, *pa'rere* is no longer carried out along the coast of Tamasaju, but further out at sea, as this technique is particularly detrimental to the environment (see box 10.3).

Pa'rere boats can also be used near Tamasaju during the wet season. They benefit from the wet season in a way, because fish prices are higher then. As these *pa'rere* boats do not need to move to faraway fishing

Box 10.3: Overfishing

The Spermonde Archipelago (map 2) is an important source of fish for Tamasaju's fishermen. This collection of coral reefs and islands stretches out for about 40 kilometers just off the coast of Takalar and Makassar. It provides an important shelter for many fish species and ample fishing opportunities for an estimated 6500 households (Pet-Soede 2000, p.13).

Because the fish are highly mobile within the archipelago, and because of natural fluctuations in fish stocks, the catch varies strongly. Rising numbers of fishermen, the increasing use of explosives and cyanide, and the modernization of fishing equipment have led to declining fish harvests. Many blame *pa'rere* in particular. With this technique, a large funnel-shaped net is dragged through the water, sometimes damaging coral reefs. Moreover, the mesh size of the nets is very small, making this a very harmful technique. Boats using *pa'rere* are no longer allowed to catch fish close to shore.

The decline of the fish stock has been most severe on the reefs that are nearest to the coast (within a 5-kilometer range). This is also the area where reefs are most at risk, largely due to blast fishing, which is performed by 15 percent of the population of the islands of the Spermonde Archipelago (Pet-Soede 2000). This technique is illegal, and is not performed by fishermen from the mainland.

grounds during the wet season, and the investments that are needed are relatively low (compared to *pa'renggae*) this type of fishing is an attractive option, and it is becoming increasingly popular. About 15 boats in the village are equipped with *pa'rere*.

Investing in modern techniques such as *pa'rere* and *pa'renggae* is only possible for those who have access to sizeable funds. Poor people are unable to invest in these types of fishing, but modern fishing does offer them a source of employment. However, those without substantial financial assets can invest in more traditional types of fishing that require much lower investments, both for starting capital and on a regular basis. The most common types of traditional fishing systems are *pa'lanra* and *pa'torani*.

Pa'lanra boats are either dugout *prahu* (called *lepa-lepa*), measuring three to six meters in length, or a larger type of boat (with a maximum weight of three tons, and a length of seven meters). In Tamasaju, there are some 30 *prahu*, and about three larger *pa'lanra* boats. A *lepa-lepa* can accommodate two people (often father and son), while the larger boats carry more. *Pa'lanra* fishing cannot be practiced when waves are

high, so during the wet season they often have to wait for days or even weeks for an opportunity to go fishing. During this season, *pa'lanra* fisher folk often incur debts in order to survive, rather than seek work in other jobs. This may seem odd, but it probably is due to the incompatibility of their fishing skills and lifestyles with other occupations.

The starting investments are only about Rp 10 million (for a five horsepower engine, a boat, nets, floaters, and rope). The nets are 700 meters long and two meters wide, and the larger type of boat uses nets of up to four meters (however, fishermen sometimes tie two nets together, to increase the reach of the net). Costs are relatively low, but so are the returns, and *pa'lanra* fishermen hardly save money, as all returns are needed to cover their household consumption.

There are also four or five *pa'torani* boats in Tamasaju. *Pa'torani* fishermen fish for the eggs of flying fish by leaving bamboo traps with coconut leaves in the water for a while, until the fish have laid their eggs inside. This method used to be more common in the past, but other methods (such as *pa'renggae*) are more profitable now, and *pa'torani* also has the disadvantages of being seasonal and highly dependent on weather conditions. The season runs from May to August, and fishermen are 15 to 20 days away from home per trip, as they go to faraway islands such as Java and Flores. Recently *pa'torani* boats from Tamasaju have even started fishing near the coasts of Irian Jaya.

In the off-season *pa'torani* ships are often used for other fishing methods. *Pa'torani* boats accommodate a crew of five, and are medium-sized. The starting investments are about Rp 20 million, of which Rp 8-10 million is needed for the fishing gear, and Rp 10 million for the boat with a 220 horsepower engine.

Rice growing is the most common agricultural activity in Tamasaju, because its flatlands are particularly suitable for the cultivation of rice. Rice is grown mostly for consumption by the households themselves. During the dry season, however, rainfall is too low to cultivate the rice fields. It is only possible to provide permanent irrigation on *sawah* land near the main irrigation canals, but even there supplies are often insufficient.

Sometimes rice paddies are sown twice a year. The second harvest is always considerably smaller than the first one, because of the insufficient availability of water, while the seeds that are used (collected from the first harvest) are inferior in quality to the seeds bought from the store, which is a common problem with HYVs. If a second rice harvest in the same year is not possible most people plant spinach, soybeans, and other off season (*palawija)* crops, which yield a considerably less valuable harvest.

Some people also grow vegetables (such as tomatoes, spinach, and cabbage) on small garden plots near the house, which are sheltered from the sun. This practice (called *pekarangan*) is fast disappearing in Tamasaju, because the available land is becoming scarce as more

Box 10.4: Limited availability of agricultural land

Most farming households only have small plots of land, as larger holdings have been split up because of the inheritance system. Over time households saw their farmlands decrease, and with it their incomes. At times of economic recession, selling or pawning land to richer farmers often is the only option. Because of this concentration of land ownership, only a small proportion of the farmers in Tamasaju have been able to benefit from modernization in agriculture. Many of the marginalized households sought refuge in fishery or non-agricultural activities (Egal 1997, p.15-6).

houses are being built within the village boundaries. Similarly, the area for expansion of rice cultivation is limited as well (box 10.4).

Large-scale chicken-farming enterprises represent an agricultural activity that is relatively new to Tamasaju. Households have started pursuing this activity in years directly following the crisis in different ways: sometimes only marginal, selling to the local market, but sometimes also in a capital intensive way, with investments coming from Makassar. Only a few households engage in this activity.

The non-agricultural sector of Tamasaju consists of a diverse range of activities. It comprises small-scale activities which reward poorly, as well as activities such as fish and shrimp trading that are often quite successful, judging by the ability of many traders to make the *hajj* and improve their houses. Trading fish is one of the most common non-agricultural activities. Whereas some fish traders buy their fish at the local auction, others go out to sea to trade with the fishermen there, as traders who buy fish at sea pay lower prices. Larger boats (*pa'joloro*) regularly go out several miles, while smaller boats (*pa'coto*-coto) stay close to the coast.

Non-agricultural activities also include the fabrication and repairing of fishing gear, running a toko, working in construction (in the village itself or in Makassar), making furniture, driving a *bemo (motorised trishaw)*, selling ice (which fishermen use to keep their catch fresh), drying fish, and working in the local crab-processing factory.

The crab-processing factory has been set up in Tamasaju quite recently, in 1998. This enterprise has become an important employer for many households, as it employs about 120 people, mostly young women. Working for this company enables employees to be more independent, and to contribute to their respective household incomes. For many households in Tamasaju the income from the crab factory is an important addition to their incomes, and it probably played an important role in helping households make ends meet when price levels rose during the crisis.

Also, there have been initiatives to form cooperative groups for processing fish. These cooperatives have not been very active though, largely due to organizational problems and mismanagement.

The majority of households that engage in non-agricultural activities have a weak position in agriculture or fishery, indicating that their activities in the non-agricultural sector constitute a key component of their livelihood. Households that are more affluent often opt to invest in ongoing agricultural or fishing activities, as owning boats and *sawah* land especially bring status to the owner.

Resource use during the crisis

During the crisis, the price levels of many types of inputs have been very unstable: the prices of fuel and fertilizers have skyrocketed within the course of months, and the prices of some of the major commodities that are produced in Tamasaju (rice, for instance) dropped drastically during the crisis, after an initial rise.

One might expect that households would react to this by abandoning certain activities in favor of others. Conversely, in general, the abandonment of production assets or activities is rarely observed, because members of most households that started engaging in side activities did so in addition to their main activities. A few exceptions aside, retirement seems to be the only reason to stop engaging in economic activities.

The opposite, diversification of employment, has also taken place mainly because of demographic reasons. Marketing, both in terms of percentage of the output that is marketed and types of marketing channels, has hardly changed for any of the groups either.

These general trends were visible among households in all sectors of resource use, but there is also a number of differences between the way different sectors have reacted to the crisis. Moreover, households in the various sectors have been operating in different contexts, experiencing different changes in the nature of their activities. These changes often already started before the crisis. In fishery, people had to deal with declining fish stocks on the one hand, but were also benefiting from the availability of modern techniques and machines on the other. Similarly, in agriculture the shortage of land posed limits on resource use, but the increased use of machines helped to increase outputs for some. In the non-agricultural sector, the new crab-processing plant offered a new source of employment. This section explores these developments and the effects of the crisis for each resource use sector.

Rich fishery households in particular have been relatively unaffected by the crisis. In a significant number of cases, fishery households bought *sawah* and boats of various kinds, which are both important

Box 10.5: The modernization of fishing techniques

Fishermen in Tamasaju have modernized their resource use through the increased use of engines instead of sails, and because of new techniques and types of nets used.
The increased popularity of modern fishing methods has two faces. On the one hand, these modern types of fishery operate on a much larger scale than the traditional fishery types, and are very effective in depleting marine resources. As stated earlier, *pa'rere* in particular is seen by many as the main cause of the overfishing of the waters near Tamasaju. On the other hand, while thus limiting the catch for traditional fishermen, the modern types of fishing methods do offer relatively easily accessible employment opportunities to poor people, because the latter need no ownership of production assets and a minimum of skills. Therefore, while contributing to the marginalization of the poor independent fishermen, modern types of fishing also offer employment opportunities to these fishermen as sailors.

types of production assets in Macassarese society. This expansion of ownership did not occur as commonly in the agricultural or non-agricultural sectors. The notion that wealthy fishery households were untouched by the crisis is further supported by the rise in production output that many fishery households experienced upon purchasing production assets.

It is quite remarkable how fishery households were able to cope in spite of the decline in the fish stocks and the rising price levels of inputs such as fuel, as reported by almost all fishermen and many of the key informants[5] who were interviewed on this issue.

There are several aspects which may explain this. Firstly, most households for whom fishing is their main economic activity carry out side activities in the other two sectors much more often than agricultural and non-agricultural households. Having side activities in other sectors reduces these households' sensitivity to stresses and shocks in their fishery activities.

Secondly, because of the modernization that has been taking place in the fishery sector (see box 10.5), members of fishing households are nowadays better equipped to sail to fishing grounds that are located far away. This applies in particular to modern fishing techniques such as *pa'rere* and *pa'renggae,* as practitioners of more traditional types stick to the same fishing grounds as before the crisis, despite the fact that they have also increased the use of engines. With their smaller boats they cannot go farther out into the open sea, because deeper waters are more hazardous, while going to other locations along the coast would lead

them into waters already fished by people from other villages. Ultimately, however, the modernization of fishing techniques tends to benefit both the rich and the poor fishermen, as the investments of the rich are rewarded with higher yields, while the sailors working on the boats receive an income, without having to invest money themselves.

Thirdly, the patron-client system is likely to provide those deprived with the necessary assistance. Although only a few of the interviewed households reported that they had borrowed money, several key informants[6] underlined the importance of the patronage system for the income of poor people, a point also supported by the literature (Pelras 2000). A sense of embarrassment might be the main motivation for denying indebtedness.

In recent years many fishery households have been changing the way labor is used. A number of fishery households concentrated the labor input of their members, but this had nothing to do with the crisis, as it was most frequently related to demographic reasons. Since the crisis, the members of most fishery households did not diversify the number of income sources by taking up other jobs. These fishery households did not need to do so, as they often already had quite a diverse portfolio of activities before the crisis. When comparing the relative importance of wage labor and family labor, fishery households, in contrast to the households in the agricultural and non-agricultural sectors, used less labor of their own household members. This is because of the increasing popularity of modern types of fishing, which use wage labor more often than the traditional fishing types. All households that bought boats and increased the input of labor did so by increasing the use of wage labor.

The agricultural sector experienced different developments. At the time of the crisis, many farmers in Indonesia were confronted with freak weather conditions, pest attacks, and expensive fertilizers and pesticides (Bourgeois & Gouyon 2001, p. 309). In Tamasaju, however, very few people reported pests, and improved irrigation with water from the Bili-Bili Dam softened the impact of droughts. However, the trends of rising input prices and declining output prices were felt commonly. Farmers consequently reduced their use of inputs such as fertilizers and pesticides. The shopkeeper of a local shop that sells farming supplies complained that many farmers had cut down on the use of fertilizers because of the rising costs. Low and middle income farmers are slightly overrepresented in this group. While this is clearly a result of the crisis, it should not be overestimated, as none of the households that were interviewed had stopped using fertilizers entirely.

For farmers in Tamasaju the enhanced irrigation opportunities are perhaps the most important change that has occurred during the crisis. The construction of the Bili-Bili Dam (see box 10.2) doubled the area of *sawah* that can be irrigated.[7] Almost all households that are active in

Box 10.6: The use of agricultural machines

Farmers have started to use more machinery than before the crisis. This makes the cultivation of the land less laborious, but could on the other hand result in a loss of employability for agricultural laborers and sharecroppers. However, the new machines are mainly tractors and irrigation pumps. Tractors replace buffalo rather than people, and irrigation systems raise the yields and lead to multiple cropping, thereby creating more employment for farm labor. As few people are full-time agricultural laborers, there does not seem to be a strong impact of mechanization in agriculture. The main problem for agricultural activities in Tamasaju therefore still seems to be the shortage of land, and the supply of irrigation water, which is still insufficient, despite the improvements that have been made.

agriculture were able to increase their output because of this dam, and because of an expansion of the area under cultivation by one-third of the households. The expansion of agricultural land might seem to contradict the earlier-mentioned shortage of agricultural land, but the former was due to a few wealthy landowners in Tamasaju who were able to obtain land outside the village, and hire people to cultivate it. In other cases, the shortage of land has forced farmers to move, or more commonly, to take up non-agricultural side jobs within the village or sometimes even in the city (Box 10.6). Additional use of wage labor did not occur among any of the agricultural households that were interviewed. In a few cases, however, agricultural households did start using more family labor, mostly because of demographic changes rather than because of crisis-induced conscious decisions to employ a larger labor force. Agricultural households thus have clearly added more family labor than fishery and non-agricultural households.

In addition, many agricultural households started using machinery (box 10.6), often to replace the traction power of buffalo that they used to own before the crisis. Farmers who started using machines bought these machines or rented them. They were able to use machines more often despite the higher fuel prices, partly because they cut down on the use of fertilizers and used more (unpaid) family labor than before. The improved irrigation, the increased use of machines, and adding family labor have together resulted in increased agricultural outputs. This increase in output, however, did not lead to higher incomes, as rice prises were declining, while input prices increased. Agricultural households, therefore, experienced a rise in their incomes as often as a decrease. Increases were achieved by households with successful invest-

Box 10.7: The use of female labor

A lot of change has occurred in women's activities, particularly in the non-agricultural sector. Macassarese society used to be characterized by a very low participation of women in economic activities, but the presence of the crab factory in particular has increased opportunities for women to engage in economic activities. These activities have not only increased the potential independence of young women, but have also contributed to a significant rise in some of the households' incomes. In a number of cases, a daughter who started working in the crab factory has become the main income earner, instead of the head of the household. Quite a number of women in the sample were also working as home-based shopkeepers, while one female interviewee was earning the lion's share of her household's income as a teacher. However, women are still completely absent in another important type of non-agricultural activity: trading outside their household. In fishery as well there are still no females active at all, while women in agricultural activities usually work only on the household's own *sawah*.

ments and because of the improved irrigation, but also because of improving employment opportunities in non-agricultural side activities. No clear patterns have emerged to explain declining incomes, as these households attribute various causes.

Unlike agricultural households, non-agricultural households have mostly added wage labor to their enterprises. This labor was added for activities in all three sectors, both for side and main activities. Apparently, non-agricultural households felt no strong need to economize on labor expenses, due to the direct relationship between labor input and output in these weakly mechanized types of non-farm activities.

Little has changed in the number of household members that are employed, and in the few cases where such changes occurred, the reasons were mostly demographic. However, in recent times, changes did occur in gender aspects of employment (box 10.7).

This is the result of relaxing attitudes on gender roles and progressing age structures of households, rather than a result of the crisis. This conclusion is supported by the fact that most women started working only after they had completed their education. This firstly shows that women are being educated, which used to be very uncommon prior to changing attitudes relating to gender. Secondly, this shows that in general there was no urgency in getting these women employed, as they could first finish

their education. This lack of employment urgency suggests the absence of motivations such as an all-paralysing fear of crisis-induced poverty.

Many non-agricultural households have started to engage in what is now their main activity after the crisis, but in most cases continued to perform their previous activities as well. Through this diversification, non-agricultural households have clearly been attempting to spread risks, instead of focusing on one particular activity like households in the fishery sector. By comparison, households in the agricultural sector have been carrying out both types of activities.

One-third of the non-agricultural households have increased their production output. This increase in output was achieved in both agricultural and non-agricultural side activities, mainly by increasing the use of capital and labor inputs, as non-agricultural households have hardly been able to expand their ownership of production assets. Despite this increase in output, a number of households have experienced income depreciation, but for the majority of these households this was due to an increase in expenditures on electricity and education. The increase in expenditures on education is clearly related to the life-cycle phase of these households, all of which have young children.

Analyzing household groups on the basis of their enterprise strategies also disclosed some interesting patterns:

One might anticipate marginal-defensive households to concentrate on labor inputs, and expanding-innovating households to concentrate on capital inputs and the acquisition of production assets. In Tamasaju's case this turned out not to be completely true, as marginal-defensive households have been acquiring new production assets as well, and they also used capital inputs. Moreover, expanding-innovating households have also maximized their use of labor. The main difference between these two groups is the type of production system that the households focused on. The changes that were made in expanding-innovating households were geared towards production systems that use modern techniques which, albeit expensive, also yield higher returns. These households bought various assets for activities in all sectors, but in particular modern boats and fishing gear. These are not only households that depend on fishery for their main source of income, but also households belonging to the other two sectors. Virtually all expanding-innovating households appear to have specialized their production activities.

The marginal-defensive households have specialized quite often as well, but the difference with the expanding-innovating households is that the changes which occurred in this group were geared at marginal, artisanal-type activities that require easy-to-come-by production assets and inputs. These households, that are mainly active in *pa'lanra* fishing and agriculture, also specialized by increasing their labor inputs. As none of the marginal-defensive households have diversified, households

in Tamasaju that are concerned with surviving apparently do so mainly by focusing their labor on one particular activity with which they are already familiar. In contrast, only a few of the consolidating-conserving households have specialized, and they occupy a position in between with regard to the nature of the investments that they have made.

Because of these differences, households practicing expanding-innovating strategies commonly experienced increasing incomes and profitability,[8] whereas most consolidating-conserving and marginal-defensive types of households did not.

A second reason why the marginal-defensive and the consolidating-conserving categories experienced a less appreciable rise in income appreciation and profitability is that these two groups hardly undertook commercialization, while quite a few of the expanding-innovating households have commercialized, as they started to engage in activities that primarily generate output intended for the market.

Moreover, expanding-innovating households have not only changed the nature of their activities and marketing orientation, but they have also expanded the scale of existing activities, by buying more boats or land for instance. This occurred considerably less frequently in the other two categories.

These differences among the strategy categories resulted in a lack of change of the profitability for the marginal-defensive and consolidating-conserving types, whereas the expanding-innovating households have been able to capitalize on their investments, and increase the profitability of their activities, thereby improving their incomes.

Household incomes and expenditures during the crisis

Households have not only experienced changing conditions in their productive activities, but also in their consumption behavior. While some had to economize on their expenses or use up savings, others have been able to buy luxury goods, or to save money.[9]

Grouping households together on the basis of their enterprise strategies showed that, despite the increased incomes in the expanding-innovating category, no clear patterns have emerged for changes in the household expenditures. Education was mentioned most often, but none of the categories show clear increases or decreases of expenditures on education. Moreover, these changes were often induced by demographic dynamics. Making the *hajj* on the other hand did occur notably more often in the expanding-innovating group than in the other two categories.

Households in the consolidating-conserving group have increased expenditures on various items, in particular when comparing the pre-crisis spending with the post-crisis expenditure levels. None of the indivi-

dual households has made large changes in its expenditures, but because many households made small upward changes, the general pattern that emerges does indicate an increase in expenditure, which is explained by the increasing price levels. In the marginal-defensive group the predominant change that occurred in the expenditures was a decrease, but in a number of cases, households were still able to increase their expenditures on home improvement.

Quite remarkably, the expanding-innovating households are the only category where households reported borrowing money, both for productive purposes, and for household consumption.

The resource use categorization shows that a large proportion of households in all sectors increased their expenditure on electricity, while in the non-agricultural sector households also spent more on education. The latter group probably attaches higher priority to education as a means of securing a future livelihood. Thirty to forty percent of the households in all sectors have spent money on durable goods, the most common expenditure concerned home improvement.

There are hardly any differences discernible in the consumption behavior of the different sectors, but some interesting insights can be drawn from how households in the different sectors experienced crisis conditions, and how the acquisition of incomes affected their coping behavior.

The main changes that fishery households had to deal with during the crisis were the rising price levels of basic needs such as food and fuel, and the overfishing of the waters near Tamasaju. However, fishermen have some advantages over farmers that enable them to cope with crisis conditions. First, they are used to dealing with some of the conditions similar to those caused by the crisis. They always had to cope with fluctuating resource stocks and drastic changes in price levels (Allison & Ellis 2001, p. 380). Moreover, fishing yields fluctuate on a daily and seasonal basis (dictated by weather conditions), so that their earnings have a regular but insecure aspect.

Second, the relationship between the use of inputs and the generation of output is not as linear as in agriculture. When a poor farmer can only buy a small amount of fertilizer he cannot achieve a high output, as the soil needs a certain amount in order to be productive. However, when a poor fisherman can only afford little fuel, he can still be lucky and have a good catch.

Despite the overall rise of production output that fishermen experienced, most of them did not report a change in their incomes. This contradiction probably is caused by the fact that the respondents deducted the increased expenses for inputs from their income increase.

As farmers receive an income only a few times a year, upon harvesting they are quite vulnerable compared to those in the other two sectors. On the other hand, this means that these households are more

used to saving money and planning their expenditures, so one could expect more solid strategies among these households.

Owners of land tend to experience effects of the crisis to a lesser extent than landless farmers, as they can decide to cut down on the use of inputs[10] and spend it on other items if they need to. Landless farmers, however, depend on others for their employment and income. Few farmers, whether landless or landowning, stopped cultivating the land because of the crisis, but some agricultural wageworkers started to work in a non-agricultural side job (in the harbor, or as a bricklayer for instance). This was not a common trend though, as this would imply a breaking away from established patronage relations, while the wages in these types of activities remained low as well.

A number of the agricultural households however could afford to borrow less money than before the crisis because of increases in their incomes, but this was not very common.

For non-agricultural households the rising price levels of inputs such as fuel, and the rising prices for rice and consumer goods were important consequences of the crisis. Like fishery households, non-agricultural households usually receive an income on a regular basis. The employees of the crab factory, and people such as teachers actually receive a salary, but the majority – traders, craftsmen, drivers, and the like – do not. Because of the widely differing nature of the various types of non-agricultural activities it is difficult to identify trends for the entire sector. It did become clear though, that diversification of the employment was quite common among these households, as many of them diversified into activities which now are their main source of income. Specialization was rarely observed among non-agricultural households.

How the crisis affected social relations

As has been illustrated in the preceding sections, households responded in different ways to the changing conditions. Some households struggled to cope with the crisis, some were hardly affected by it, and others were able to turn it to their advantage; there were both winners and losers. This section explores at the village level how the crisis has changed the proportion of poor to rich households, how it affected social relations within the village, and, on a regional level, the role of Makassar City.

Since the crisis, only the expanding-innovating households clearly improved their socioeconomic position. In both the marginal-defensive and the consolidating-conserving categories, few households were able to do so. As the expanding-innovating households were more successful in capitalizing on their investments than the marginal-defensive house-

holds, one might expect a situation where the rich get richer, and the poor are impoverished even further. The patron-client system that pervades Macassarese society could easily facilitate such polarization. However, while patron-client relations contain an element of extortion, at the same time they bring benefits to both parties involved. People who do not own assets are enabled to use the assets of those who do own them. Without the help of patrons, poor people would thus have fewer opportunities to invest, or to purchase items for consumptive purposes. In this way patrons enable their clients to take on activities and types of resource use that would otherwise be denied to them. However, the conditions under which this help is supplied certainly add an extortive aspect to patron-client relations. The patrons benefit from maintaining existing power relations, and from tying clients to them. As people in Tamasaju do not often borrow from family members, the patron-client system is the only safety net for many poor.

These issues are not limited to any of the resource use sectors in particular, as they apply equally to the relations between sharecropper and landowner, sailor and boat owner, and non-agricultural employer and employee. In particular in agriculture, patron-client relations can easily lead to unsustainable types of resource use, as the temporary cultivation of land tends to lead to output maximization without consideration for the future. This applies to a much lower extent to fishery because of the open-access nature of the resources, although patronage relations may have contributed to the overcrowding of the fishery sector and its overfishing.

Although patron-client relations as such have not changed, the occurrence of these relations most likely has increased in the fishery sector. As boat-owning households have in several cases been able to buy more boats, they increased the number of workers that they employ, thus increasing their status, but also the pressure on common resources. This development, a direct result of the behavior of expanding-innovating households in fishery, has not been observed in the agricultural or non-agricultural sectors.

While patron-client relations occur only at the local level, we also need to consider the socioeconomic impacts of relations at the regional level, that is, between Tamasaju and the city of Makassar. Tamasaju's proximity to Makassar might lead one to expect that this economic center attracts people looking for non-agricultural employment in particular. The role of the urban economy therefore deserves some special attention.

While most urban areas in Indonesia were more adversely affected by the crisis than rural areas, Makassar coped relatively well due to the presence of the harbor and the predominance of export trade commodities that benefited from the crisis (Titus 1999). Moreover, Makassar's

informal economy might have functioned as a safety net for landless farmers and other rural poor, and to a certain extent this indeed seems to have been the case for people from Tamasaju. Some of the key informants who were interviewed about this said that there was some commuting,[11] although only one person in the sample mentioned that he worked occasionally in Makassar as a bricklayer, in addition to his *sawah* cultivation. Low wages in Makassar's non-agricultural sector, however, make this an unattractive option. Moreover, people often lack the required skills and education, nor do they have the social networks needed. Furthermore, the lifestyle of fishermen often is not compatible with non-agricultural activities, as many work at night and rest in the daytime. Consequently, there does not seem to have been a trend of people moving from Tamasaju to Makassar.[12] As a matter of fact, some households even moved from Makassar back to Tamasaju, and started working as *pa'lanra* fishermen and as furniture makers during the peak of the crisis. This, however, does not imply that inhabitants of Tamasaju have not been frequently interacting with Makassar. Furniture making, driving a minibus, and the fish auction of Tamasaju are just some examples of activities that have clear links with Makassar, and shrimp traders have always sold their merchandise in Makassar and the Maros region. There are no indications that the role of these places has changed for these activities, and that they did not play a vital role in overcoming some serious crisis impacts.

The emergence of poultry farms introduced strong urban ties that did not exist before the crisis. These changes in rural-urban interaction, however, can hardly be seen as impacts of the crisis.

Conclusions

Crisis-induced changes in price levels have certainly been felt in Tamasaju, but the crisis effects on resource use have been small. The modernization in fishery and agriculture, which occurred despite the increased prices for fuel, pesticides, and fertilizers, are proof of the relatively low impact of the crisis. Nonetheless, some farmers reduced their use of fertilizers, as these became too expensive.

The crisis thus hardly altered resource use per se, nor did it force households to abandon any of the resource use sectors in favor of others. While engaging in non-agricultural activities enabled fishermen and farmers to cope with the crisis conditions, they did not stop performing their main types of existing activities. In a number of cases, seeking employment for grown-up children has been the main motivation to start engaging in new non-agricultural activities.

Table 10.1 below presents a concise overview of the developments that shaped resource use before the crisis, as well as the direct effects of the crisis on households, and the coping behavior of households in the different types of resource use. Changes that occurred in resource use are mostly caused by structural processes of commercialization, technological modernization, overexploitation of fishery resources, and the limited

Table 10.1 *Resource use and livelihoods during the crisis*

	Fishery		*Agriculture*		*Non-agricultural activities*	
	Rich	*Poor*	*Rich*	*Poor*	*Rich*	*Poor*
Developments before the crisis	over-exploitation moder-nization improved accessibility to new grounds	over-exploitation moder-nization created more wage jobs	mechani-zation (buying mach.) improved irrigation shortage of agricultural land	mechani-zation (hiring mach.) improved irrigation shortage of agricultural land	presence of the crab factory nearly urban marketing oppor-tunities	presence of the crab factory
Direct effects of the crisis	rising fuel prices rising prices of daily needs	rising fuel prices rising prices of daily needs	rising input prices rising prices of daily needs	rising input prices rising prices of daily needs	rising input prices rising prices of daily needs	rising input prices rising prices of daily needs
Coping mechanisms	expanding catch territory non-fishery side activities	resorting to patron-client ties side activities (in all sectors) working on modern boats	cultivating land outside the village increasing use of family labor and machinery	increased use of family labor and machinery resorting to patron-client ties reducing use of fertilizers non-agricultural side activities	diversifying into present main activity increasing use of wage labor and capital inputs	resorting to patron-client ties increasing use of labor and capital inputs diversifying into present main activity

[1] It should be emphasized that some households have several migrant members at different locations.

availability of agricultural land. These are processes that have been present in Tamasaju since long before the crisis. Because of Tamasaju's diverse economy, its links with trading channels in Makassar, and the patron-client relations, the ramifications of the crisis have remained fairly limited.

Notes

1 The fertilizers mentioned most frequently by the farmers in the research were:
TSP: Triple Super Phosphate – to fertilize the soil
Urea: NO2 (Sodium) – for the leaves of the crop
KCl: Potassium Chloride – to improve the growing process of the crop
ZA: Ammonium Sulphate – for the leaves of the crop.

2 Obviously Macassarese here does not refer to the inhabitants of Makassar city. It is the name of one of the largest ethnic groups that live in South Sulawesi. Other important groups are the Buginese and the Toraja.

3 *Adat* means custom, the oral *adat* laws constitute an important part of the Indonesian legal system. (Koentjaraningrat 1975, p. 164)

4 Having a certain activity as the main source of income means just that, as it is not uncommon for households to carry out side activities, often in other sectors than their main activity.

5 All prices that are mentioned are at 2002 levels, when Rp. 10,000 was equivalent to € 1.00.

6 Field research, 2003.

7 Interviews with key informants, field research, 2003.

8 Interviews with key informants, field research, 2003.

9 That is, the degree to which changes in the use of inputs are reflected in the production output and income appreciation.

10 Because of the private nature of borrowing, lending, and saving money, it was difficult to obtain reliable information on these issues.

11 Interviews with key informants, field research, 2003.

12 Interviews with key informants, field research, 2003.

13 Interviews with key informants, field research, 2003.

11 Indonesian Rural Livelihoods and Resource Use in Crisis?

Milan J. Titus

In this final chapter an attempt is made to draw some general conclusions from the preceding case studies in order to answer two major questions: what were the main impacts of the economic crisis on rural livelihoods in Indonesia and which response mechanisms were developed to cope with these impacts?

In the widely adopted sustainable livelihood approaches developed by Scoones (1998), the DFID (1999), and Ellis (2000), the use of local assets by households – as expressed in their livelihood strategies and coping responses – first of all is determined by the vulnerability and flexibility of their personal conditions and structural contexts (i.e., the resource use systems, social organization, local governance, institutional framework, and cultural factors). Consequently, our analysis will focus on the role of these determinants in the explanation of the differential impacts and responses to the crisis, but with special attention to two different levels of analysis: the community and the household. The main reason is that structural conditions manifest themselves more clearly at the community level, whereas the impact of personal conditions is most evident at the household level. Finally, this concluding chapter will try to answer another fundamental question of the research program: who were the winners and the losers of the coping strategies induced by the crisis (cf. White, Titus & Boomgaard 2002).

Crisis impacts at the community level

At the community level differences in vulnerability and flexibility in facing the impacts of the crisis seem to be primarily related to structural conditions such as the dominant types of resource exploitation (local resource base, technology, types of production), the level of commercialization (mode of production), population pressure upon local resources (land, capital, labor/employment), and social organization (regulating access to resources). This is not surprising, as it is these conditions which ultimately determine the sensitivity of a rural community to the

shocks and stresses of changing prices of industrial consumer items, farm commodities, production inputs, and wage labor, as well as to sudden fluctuations in demand and supply on the local, national, and international markets. Although the Indonesian crisis seems to have hit the urban economy in particular (Booth 2002; Lont & White 2003), the rural economy was not unaffected, due to the mass dismissals of rural migrants from urban formal sector jobs, the soaring prices for urban produced or imported manufacturing products, and the lagging prices for rural wage labor and farm products. This would suggest that the level of rural-urban interaction and commercialization of a local rural economy would be a major determinant of its vulnerability to the crisis.

This assumption seems to be corroborated by the case studies dealing with rural communities that are mainly dependent on intensive food crop farming (rice, maize, soybean) in combination with (additional) non-farm work performed locally or in nearby urban centers. These cases are mostly found in the densely populated, irrigated farming areas around the big cities of inner Indonesia, such as the hinterlands of Jakarta, Bandung, and Yogyakarta (cf. Breman & Wiradi 2002; Kutanegara & Nooteboom 2002).

In those areas, rural communities often suffered the most because of their strong dependence on faltering urban markets, the steeply rising costs of production inputs, and the lagging prices for food crops on the domestic markets, while – at the same time – they had to absorb an increasing flow of return migrants from the collapsing corporate sector. Commercial rice farmers were among the severely affected categories, because of their dependence on a semi-monocropping system, which is quite inflexible with respect to the introduction of other cash crops apart from the *palawija*, or food crops, and also tends to become reliant upon expensive biochemical inputs (cf. Gérard & Ruf 2001). Most hit, however, were the landless farm workers in these areas, because the bigger farmers could no longer afford to pay the rising wages which subsequently fell below the increasing costs of living (Booth 2002; Manning 2000). On the other hand, rural non-farm workers were usually less affected, because they could produce cheaper products and services for lower-end market niches and because of their tendency to use less expensive raw materials that were mainly of local origin (cf. Rijanta 2006). Moreover, many small non-farm producers in rural areas were able to substitute their cheaper products for the more expensive formal sector products (such as mattresses, garments, processed food, and so on), because the latter type of products were facing the negative impacts of rising import costs and declining purchasing power. In the case of export-oriented non-farm production, for example furniture, leather goods, ceramics, and artisanal products (*batik*, silverware), local export "booms" even seem to have occurred, as their international com-

petitiveness was enhanced by the deteriorating domestic currency rates (cf. Sandée 2002). Similar cases of resilience against the crisis could be noticed in certain informal sector niches like the expanding network of telecommunication shops/kiosks (wartel) which also sell cellphone cards and serve the increasing demand for commnunication with migrant workers (cf. Rijanta, 2006).

Less affected were rural farm communities which could subsist on their own food production, sometimes supplemented by non-farm incomes from (seasonal) migrant workers. Usually these subsistence farmers are found in villages in relatively isolated upland areas, or in pioneer farming areas where there is still some access to "common pool" resources and state forests that are not adequately protected (cf. Burgers 2004, and chapter 2). Although households in these communities certainly have suffered from the sharply rising prices for consumer goods, agricultural inputs, fuel, and public services (health, education), usually they have been able to cope with the worst impacts of the crisis by producing their own food with low-input farming techniques, and by occasionally selling small amounts of more valuable commodities such as timber, fish, or cattle to make their essential procurements and payments.

A contrasting development is shown by the highly commercialized rural communities producing cash crops for either the export market or the domestic market. A first category mainly produces perennial crops in so-called mixed forest gardens planted with a variety of crops, such as coffee, cocoa, coconut, clove, cinnamon, pepper, vanilla, and various types of fruit trees. These export cash crop farmers usually derived considerable benefits from the crisis through the subsequent depreciation of the domestic currency, which greatly improved the competitiveness of these farmers on the world market and raised their rupiah incomes to the extent that they often started to engage in conspicuous consumption (cf. Singeling 2005, and chapter 1). The second category of cash crop farmers benefiting from the crisis mainly subsisted on the cultivation of horticultural crops such as peppers, eggplant, cucumber, spinach, chilli, onions, cabbage, leek, and carrots, which are mainly produced for the domestic market and the urban market in particular. Although these farmers generally did not benefit from international currency disparities (except those in Kerinci) and had to cope with rising input costs, they were facing rapidly growing urban markets with a rising demand for vegetables due to further urbanization and changing consumption patterns. Consequently, horticultural farmers were less vulnerable to the crisis and its negative impacts on overall purchasing power. Moreover, the labor-intensive nature of this type of cultivation also created "windows of opportunity" for many landless and petty farmers who could participate as farmworkers and sharecroppers. Evi-

dence of the resilience of horticultural farmers, however, does not seem to be conclusive, as there are also reports of severely hit horticulturalists in lowland Yogyakarta, who suffered from the rising production costs and collapsing urban market, due to the coincidence of overproduction and declining purchasing power (see chapter 5).

Our conclusion, therefore, must be that there is no unilinear relationship between the level of rural-urban integration or commercialization of rural communities on the one hand, and their vulnerability to the impacts of the economic crisis on the other, for the very reason that these impacts are more closely related to the specific resource base conditions and prevailing type of resource exploitation of a community than to its mode of production characteristics as such.

With respect to the flexibility of rural communities in coping with the crisis impacts, however, the case studies seem to present a more complicated picture. Here, both the main types of resource exploitation and the dominant types of social relations seem to play a major role in coping behavior. The first determinant presents its own intrinsic opportunities for adaptations to shocks and stresses. Wet rice or sugarcane farmers, for example, being less flexible in crop choice and cultivation techniques than horticulturalists, often operate in block systems which have to follow strict cultivation and irrigation schedules according to a monocropping pattern that is strongly favored by local authorities for reasons of food security and pest control (cf. Gérard & Ruf 2001). Due to the prescription of specific high-yielding varieties, there is also little flexibility in the use of expensive biochemical farm inputs. Considering the suppressed price levels for this staple food – which have been mainly imposed for social and political reasons – it is not surprising that many rice farmers tend to switch to more rewarding crops and flexible types of cultivation. In the densely populated and intensively cultivated rural hinterland areas of the larger urban centers, horticulture became a profitable alternative. The same applies to mountainous upland areas, where dry field farming of food crops and animal husbandry are increasingly making place for the cultivation of highland vegetables, which have become a booming (export) cash crop in the aftermath of the crisis (cf. chapters 8 and 3, respectively).

Quite surprising was the relatively high level of flexibility found in perennial cash crop farming or agro-forestry systems. Unlike seasonal crops, perennial crops have to be planted years in advance before bearing fruit, so that it is not possible to adapt the cropping system to short-term market fluctuations. This latter problem, however, seems to have been adequately solved by planting mixed stocks of perennial crops in so-called mixed forest gardens. If, for example, the price for coffee in the world market starts falling, the farmer may simply shift his attention to another crop with a better price in his mixed forest garden, for

example cocoa or clove. Thus, by planting a sufficiently heterogeneous stock of perennial crops, a farmer may secure relatively constant incomes by "riding the waves" of world market price fluctuations and switching from one crop to another. Another reason for the flexibility of perennial cash crops in times of crisis is that these crops do not require high labor and capital inputs in periods of rising input prices or market flaws (cf. Singeling 2005; Burgers 2004). Moreover, most perennial cash crop farmers also seem to own land for food crop cultivation, thereby considerably reducing their vulnerability to cash crop failures and price drops.

In communities with dry upland farming systems based on subsistence food crops, flexibility usually is achieved by adapting labor inputs and – to a lesser extent – by raising money from animal husbandry. In times of crisis for example, cattle that is often kept as a form of investment may have to be sold. In doing so, however, the farmers do not only deplete their savings, but also the amount of manure available for food crops, which affects the yields on which they have to subsist. Consequently, many farmers in dry upland areas such as Gunung Kidul (DIY) have started to cultivate fodder crops and timber trees during the crisis, in order to increase their cattle stock and reduce their vulnerability (see chapters 5 and 4, respectively).

In the case of nearby "open access" resources, such as coastal waters or forest reserves, these resources have often been tapped for an additional income from fishing or logging. During the crisis the demand for essential commodities, such as fish or construction timber, seems not to have declined significantly, as a result of which their prices could at least rise with the inflation rate.[1] Consequently, these "open access" resources have often been exploited in an indiscriminate way, namely without any regard for legal regulations and sustainability requirements (cf. Singeling 2005; Vogelij 2005; Burgers 2004; Koning 2004; Sunderlin 2000). Attempts by local authorities to control this abuse of natural resources often failed for various reasons. First, because these local authorities usually were too close to the problems of the needy households involved in these illegal practices, and also because by turning a blind eye they often could enjoy some of the proceeds of these practices (Kartodiharjo & Jhamtani 2006).

In rural communities mainly depending on non-farm activities, flexibility is usually achieved by increasing the self-exploitation of (family) labor, reducing the use of wage labor and switching to the production of goods and services that may substitute the more expensive types of corporate sector products (especially those with a high import component). In this way most small-scale non-farm producers in Yogyakarta province and South Sulawesi have been able to survive the crisis and even consolidate their position (cf. Rijanta 2006; Sandee 2002). A spe-

cial case that demonstrates the flexibility of non-farm activities in coping with the crisis is reported from semi-rural or peri-urban communities, which utilized their locational advantages near urban markets and switched to student housing, catering services and various informal sector jobs (see chapter 7).

Flexibility with respect to crisis impacts, however, is not only a function of the intrinsic qualities of the respective resource use systems, but also – or even more – of the social characteristics of the rural communities themselves.

The prevailing social relations of production, and especially the institutional framework regulating access to resources and their exploitation, are key factors of differential flexibility in the various types of communities. In weakly commercialized tribal or peasant-type communities, such as those in Torajaland (C. Sulawesi), East Kalimantan and upland Southern Java, social cohesion and production relations on the basis of reciprocity and sharing may still be strong, and therefore offer effective networks for coping with livelihood stresses and shocks. This was clearly exemplified by the way in which the Toraja communities were able to bind their migrant workers with commitments to both their relatives and their communities through ceremonial obligations, which brought in a considerable flow of money from other parts of Indonesia (cf. chapter 1).

Other examples of resilience offered by social networks and sharing mechanisms to counter the crisis are presented in the case studies on upland communities in Kerinci (W. Sumatra), South Sulawesi, and Yogyakarta, where temporary and rotational rights of land utilization (*pinjam, giliran*) and various types of sharecropping (*bagi hasil*) and labor arrangements provided access to land, work, and produce for the less endowed farmers (cf. Burgers 2004; Singeling 2005; Baiquni 2006, and chapter 5). Institutions based on reciprocity such as *gotong royong* (communal voluntary work), *sambat sinambat* (neighbor help) and *numpang* (family obligations for providing food and shelter) often played a decisive and vital role in absorbing the flow of return migrants to the rural areas of Java during the peak of the crisis (Baiquni 2006).

In return these migrants were expected to offer their labor for all kinds of useful jobs, as occasional workers or "*kuli serabotan*". Usually this labor is not paid for if it is performed within one's own household or enterprise. Social networks offering a minimum level of security to, for example, female single-headed households or the elderly, were often put under severe stress by the crisis, but continued to function at a low level. An interesting adaptive mechanism found in the Javanese case studies, was that the needy households and family members were no longer expected to contribute to public events or family ceremonies in money or in kind, but could suffice with providing their labor or help.

On the other hand, it must be acknowledged that these informal social networks never would have been able to offer enough help and security to the rural poor, without the parallel social safety net (JPS) program of the World Bank in cooperation with the Indonesian government. This program was implemented by local authorities and mainly provided cheap rice and other vital daily needs (*sembako*) to households classified as poor or needy by the local village administration.

Thus, even in the more commercialized rice farming or (export) cash crop farming communities, formal and informal types of institutions and networks were still functioning as buffer mechanisms under stress conditions. Interestingly, however, the advancement of commercialization tended to shift their role from social security and sharing mechanisms to more business-oriented and exploitative mechanisms (cf. Hüsken 1979, 1989; Titus et al. 1994). This is also clearly demonstrated by the case of changing patron-client relationships such as the Macassarese *punggawa* system, which in the presented case studies still play an important role in providing work and capital to farmers, fishermen, and newcomers on the labor market, but in a socially less binding and more business-like way (cf. chapters 10 and 9, respectively, and Pelras 2000). The same seems to hold for traditional sharecropping, labor, and credit arrangements, which in South Sulawesi and Central Java often have been transformed into modern exploitative mechanisms such as *kontrakan, borongan,* and *kapital bagi hasil.*[2] The first type of sharecropping arrangement is based on contractual relationships with villagers or outsiders, and usually involves a sharecropping arrangement for a certain time period on a fifty-fifty basis, without any contributions from the landowner's side (as was still the case in the traditional form). The latter type of arrangement involves sharecropping on the basis of investment loans from traders and money lenders. Both forms enable landless or petty farmers to obtain access to vital resources, and have often evolved as a result of larger farmers engaged in commercializing farming systems switching to more rewarding activities such as transport, trade, and credit services (cf. Singeling 2005; Rijerse 2005).

These examples of institutional flexibility clearly show that commercialization as such does not necessarily imply the erosion of institutions offering access to resources for the poorer sections of the rural population, not even under crisis conditions. As the crisis definitely has benefited many large (export) cash crop farmers, it may even have promoted their switch to trade, transport, and financial services, and, therefore, have improved access to vital resources for poor farmers.

A similar flexibility of the institutional framework was also observed in some export cash-crop-producing pioneer farming communities in Kerinci, where new settlers in the uplands could be absorbed through arrangements which allowed them to clear, plant and sharecrop land for

the larger landowners who had initially benefited from the export "boom" and then switched to other, more lucrative types of activities when this boom subsided. Such symbiotic practices enabled the landowners to accumulate agricultural wealth and land while providing opportunities for sharecroppers[3] (cf. Burgers 2004). Moreover, advancing commercialization and the crisis sometimes made the fairly rigid gender relations more flexible by increasing female labor participation. In South Sulawesi, for example, female employment (outside the household) has always been the lowest in Indonesia, especially in rural areas. But with the increasing commercialization and diversification of the rural economy, rising levels of female education and the increasing pressure for additional cash income, female employment clearly has risen in the research villages since the crisis (cf. Singeling 2005, Rijerse 2005, Vogelij 2005).

Quite remarkably, however, socio-institutional flexibility seems to have played a much less positive role in pioneer farming areas with ethnically mixed types of communities. When these communities were confronted with increasing pressures upon resources and sudden economic shocks, tensions and conflicts tended to arise along ethnic lines, often leading to the discrimination, expulsion, or departure of minority groups of recent migrants such as the Madurese in East Kalimantan (cf. chapter 2) and the Javanese in Kerinci (cf. Burgers 2004). Similar ethnic tensions, reinforced by the crisis, have been reported from pioneer farming zones in Luwu District (South Sulawesi) by Roth (2002). Obviously, institutional flexibility requires a certain level of social cohesion and stability, in order to become effective under stressful conditions.

It would be naïve, therefore, to assume that all types of rural communities would be potentially strong enough to re-configure their resource allocation mechanisms in such a way, that they could cope with all the crisis impacts. Particularly communities already suffering from high population pressure upon resources and strongly linked with the faltering urban economy, such as those in Yogyakarta province or Java's north coast, often were unable to overcome the shocks and stresses on their own strength. Consequently, the national and local governments had to install local support programs, such as the social safety nets (JPS), which provided food aid and school fee subsidies to the poorest households. In spite of much criticism on the arbitrary implementation of these programs, due to frequent abuse through "leakages" (i.e., theft), favoritism and corruption, the programs certainly have contributed to relieve the plight of the rural poor in the Javanese case studies (cf. Baiquni 2006, and chapter 5). This was also clearly demonstrated by their low propensity to withdraw children from school, or sell their houses and land in order to secure their basic needs and maintain a minimum level of survival.

Household strategies and responses

The analysis of the impacts of the crisis on household livelihoods should be primarily based on insights into the coping mechanisms and responses among the various types of households according to their socioeconomic position within the respective communities. As it can be assumed that there is a close relationship between a household's socioeconomic position and its livelihood strategy (cf. Ellis 2000), this should hold as well for the household's coping responses which can be seen as *ex post* facto extensions of a household's strategy. For instance, it may be assumed that survival households would be most vulnerable to crisis impacts and have the least risk-taking capacity, so that these are most inclined to diversify income sources, maintain production levels by increasing labor inputs, retreat into subsistence production, or look for additional work elsewhere through migration. Where consumption is concerned, these survival households would be most inclined to save on household expenditures, modify diets, reduce spending on public facilities (such as health care and education), and – finally – eat into their own stocks and savings. At the other extreme, accumulation households would display the opposite characteristics of this behavior, with the consolidation type of households somewhere in between.

The case studies presented in this book, however, show considerable deviations from this ideal-typical pattern of responses as outlined. Not in the least because of the "disturbing" influence of large differences in social and environmental conditions, as well as of the prevailing types of resource use among the various types of households, or even within each of the strategy types themselves. Thus, survival households of subsistence-oriented upland farmers, or pioneer farmers, appeared to be less vulnerable to the crisis impacts than survival households of for example commercial rice farmers with their high external dependency on capital inputs and the urban economy for selling their output and for additional employment opportunities during the dry season. Survival households of (export) cash crop farmers and horticulturalists also tend to be more vulnerable to external factors, but due to favorable marketing conditions the crisis often offered them opportunities to even improve their position (cf. Burgers 2004, and chapters 9, 8, and 5, respectively). On the other hand, survival households exclusively depending on either farm or non-farm employment were often severely hit, because they did not own any land for subsistence production, and were facing declining demand for goods and services, while their wages lagged considerably behind the rapidly rising prices for basic consumer commodities (cf. Rijanta 2006, and chapter 7). Many of these survival households consequently were forced to find (additional) livelihoods as workers or exploiters of open access resources, such as fishing, sand

and gravel digging, stonecutting/crushing, illegal logging, or brick making.

Similar differences in vulnerability could be seen among the accumulation type households, although these differences were subdued because of their greater ability to cope with the negative impacts of the crisis and to switch to other, more rewarding types of activity. The latter case is clearly illustrated by the larger-scale farmers within commercialized farming systems who switched frequently to wholesale marketing in farm commodities and production inputs, and to financial services (cf. chapters 8 and 5, respectively), while – at the same time – renting out their land to poorer sharecropping farmers. However, in cases where accumulation type households could directly benefit from rising commodity prices and windfall profits, they usually did not take much risk and continued to produce what they had always been doing. This sheds a different light on the assumption that risk-taking behavior is a typical attribute of accumulation households. An explanation might be that since most of them already had achieved a high living standard and accumulated enough wealth, they felt little need to expand their farms or enterprises even further, and become exposed to increasing costs of investment and rising risks of failure, especially during the crisis and its aftermath. In that light, many accumulation households seem to display a rent-capitalistic type of behavior rather than an entrepreneurial type of behavior.

On the other hand, survival and consolidation type households often appear to have exploited the crisis benefits to the utmost. Usually this was done by expanding their farm areas and planting new and more profitable crops in order to secure their precarious positions (cf. chapters 9, 5, and 4, respectively), Accumulation type households, therefore, could not always be singled out as the most dynamic ones in responding to the crisis, that is, neither in an *a priori* or in an *a posteriori* sense.

Remarkable differences among and within types of households were also found with respect to specific productive responses. Usually, it is assumed that survival households have no other resource than their labor when coping with crisis impacts. This would imply that increasing labor inputs in production is the only solution for maintaining productivity levels in the face of a declining use of capital inputs.

This indeed has been the common response of many small scale subsistence type of producers who resorted to greater self-exploitation of labor. But, in case of a high dependence on modern farm inputs to eke out a subsistence livelihood from their tiny farms, petty farmers also seemed willing to spend part of their non-farm incomes to buy these expensive inputs. This was especially the case among petty rice farmers with non-farm side jobs in nearby urban centers, such as Yogyakarta (cf. chapters 5 and 4, respectively) or Makassar (cf. chapters 9 and 10,

respectively). Moreover, many survival and consolidation types of farm households involved in highly commercialized forms of horticulture resorted to credit systems such as *kapital bagi hasil* which enabled them to procure the necessary capital inputs from the commodity traders (cf. chapter 8). Of course, this system was only possible because the rise in the market prices for these commodities matched those of the agricultural inputs, which was clearly not the case with rice. This latter case again shows that petty farmers do not necessarily engage in risk-avoiding behavior when offered viable opportunities. But, where there are no opportunities for marketing a surplus at reasonable prices, or engaging in non-farm side jobs and obtaining productive loans, petty farmers indeed have no other choice than to retreat into subsistence types of production and to use their own (family) labor to maintain productivity levels. This response pattern has mainly occurred in isolated upland farming communities, or in pioneer farming areas. However, a common problem here is the frequent lack of available family labor due to the household's composition which often may be either too old or too young.

In contrast, accumulation households rarely face these labor problems, as they have enough surplus production and financial means to attract wage labor. Consequently, family labor is much less used for farming activities in these households and their children are often enrolled in advanced education, while the adult household members are able to participate in more rewarding types of non-farm jobs. Neither of the case studies, therefore, has shown any evidence that labor commitment in the accumulation type households has been deeply affected by the crisis conditions.

Within the sphere of responses in consumption, diversification of income sources seems to have played a major role in coping with the crisis. This applies to all types of households, but for different reasons and in very different ways. Among the survival and consolidation households, often there was the urgent need to find additional cash incomes to pay the rapidly escalating costs of basic needs, production inputs, and public services. Moreover, there was the increasing pressure to find gainful employment opportunities for the growing group of jobless household members and return migrants. These aims could be realized first of all by looking for all kinds of odd jobs and occasional work within the household and the local community itself, usually known as *kuli serabotan*. This included jobs, carried out simultaneously or successively, as farm workers, sand and gravel diggers, cargo loaders, water carriers, *pasar* sweepers, or tricycle drivers. In instances of proximity to open access resources, the list of activities can be extended to include illegal logging, fishing, firewood collection, charcoal making, timber sawing, and so on. In nearly all of these cases, cash earnings, if any, were

so low that most of these occasional workers and return migrants gravitated to the cities again when the urban economy started to recover in the aftermath of the crisis, as can be witnessed from the enormous swelling of the informal sector since the turn of the last century (cf. chapter 7, and Manning 2000). An increasing number of rural migrant workers also choose to seek employment abroad, namely in Malaysia, the Middle East and Hong Kong, but frequently also or in the resource "boom" provinces of outer Indonesia (cf. Titus 2002).

It should be emphasized, however, that in many cases these external resources could only be tapped through considerable investments and debts made by the rural households in helping these migrant workers to gain a foothold (cf. chapter 7). Job diversification in these poorer types of households, therefore, was mainly due to economic push conditions that were strongly affected by the crisis and its aftermath, whereas job diversification in the accumulation type of households was the result of a switch to more rewarding types of activities which became accessible through the higher levels of education and capital accumulation in these households. As job diversification through labor migration and multilocality of activities are concomitants of increasing rural-urban interaction and economic globalization, this response mechanism will become more pervasive in all household categories in the near future, although for different reasons and with different outcomes. Even households in remote upland areas and pioneer farming communities, such as those in Gunung Kidul (DIY), Kerinci (West Sumatra) or Torajaland (Central Sulawesi) now seem to be involved in this type of livelihood response mechanisms (cf. chapters 5, 3, and 1, respectively), which suggests that the impact of the economic crisis has become less relevant in view of the overwhelming forces of economic integration and internationalization.

Restraining consumer expenditures is another important response mechanism, with considerable differences between the various types of household strategies. Usually, accumulation type households hardly experienced any constraint in this respect, whereas survival type households often had to sell some assets and substitute vital items in their menu with inferior types of food. Important deviations from this general pattern, however, were found in the (export) cash crop and horticultural farming communities, where even the poorer farm households could still benefit from stable or rising crop prices and increasing rupiah incomes during the crisis.

Another unexpected finding was that only very few survival and consolidation type households were compelled to withdraw their children from school due to the rising school fees and falling household incomes. This reflects not only the strong motivation of parents to send their children to school – if necessary with the help of relatives – but

also the positive effects of the government's program which subsidizes school fees for the rural poor (with World Bank support).

The forced selling of vital assets such as land and houses was hardly encountered in the case studies covered by the KNAW projects in Yogyakarta and South Sulawesi. This was true even among the survival households, although this may be due to some methodological deficiencies of the research, because such households usually will have left the community altogether. Much more common was the selling of jewelry, consumer durables, and cattle, as well as using up cash savings and borrowing money from relatives, traders, money lenders, and shops.

Another important finding from the case studies in Yogyakarta province and South Sulawesi was that the productive responses of the various types of households and their consumptive behavior did not always correspond. Normally, it might be expected that accumulation type households would mainly display an innovating-expansionistic type of behavior in their productive responses, together with a typical consumeristic behavior in their consumption responses (cf. Lösch, Fusillier & Dupraz 1991). Actually, there were considerable deviations from this ideal-typical response pattern; especially among households with resource use systems that could benefit from the crisis such as (export) cash crop farming, horticulture, and certain non-farm activities producing export articles or cheap substitutes. Singeling (2005, pp. 141-158), for example, found that 25 percent of the accumulation type households in Parigi did not follow an expansionist-innovative response pattern, while 42.8 percent of the consolidation type households followed this pattern, and not less than 44.4 percent of the survival type households followed a consolidating-conserving pattern.

A considerable part of the socioeconomically weaker types of households in this cash crop producing village, therefore, were more active in entrepreneurial activities or undertakings than expected. Of course, they could only do this by exercising restraint in their consumption behavior. On the other hand, one-quarter of the accumulation type households obviously were satisfied with their economic position, and were not willing to improve it further by making sacrifices in consumption. Some of these households indeed had reached the more advanced age brackets with grown-up children who often were on the verge of leaving the household, but most of them did not fall into this category and were just disinterested in the pursuit of more wealth, and therefore might be characterized as displaying a form of rent-capitalistic behavior. The more so, since some of them maintained levels of consumption and lifestyles that clearly were not compatible with the productivity of their entrepreneurial undertakings (cf. Singeling 2005; Rijerse 2005).

Impacts on resource use sustainability

This section tries to assess the impacts of the crisis and the related household coping mechanisms on the sustainability of rural resource use itself. Although this was not a central research topic in most of the case studies, an assessment can be made in an inductive way by analyzing the experiences in a few relevant case studies. In his dissertation study Baiquni (2005), for example, has made an interesting analysis of these sustainability impacts in five villages in Yogyakarta province, which had very different agro-ecological conditions and resource use systems. By first classifying the major resource use systems according to their sustainability criteria, he was able to determine the direction of change in sustainability as a result of the main impacts of the crisis and related coping responses on each of the criteria. For this purpose he used Conway's (1986) typology of criteria, indicating three dimensions of sustainability: economic sustainability (productivity and viability criteria), social sustainability (access and equity criteria), and ecological sustainability (environmental stability and continuity criteria). The result of this exercise was that sustainability of local resource use was highest in the mixed forest gardening and the tree farming/fodder crop-*cum*-animal husbandry systems. Both are dry upland farming systems that are relatively resistant to drought, erosion, and crop diseases, and – due to the diversity of crops and products – also to the vicissitudes of the market. In addition, these upland farming systems are also characterized by low requirements for technical inputs that often are expensive and environmentally polluting.

On the other side, sustainability was lowest in the *tegalan* food cropping systems and in the lowland or upland horticultural systems, because these were either drought-sensitive and erosion-prone, or sensitive to plant diseases, soil depletion, and pollution, because of the heavy use of biochemical inputs. In terms of economic viability, however, the horticultural systems scored much higher than the first resource use category, and consequently were increasingly adopted even during the crisis.

Quite surprisingly, wet rice cultivation – formerly characterized as the ecologically most stable agricultural system (cf. Geertz 1963) – scored only in the middle category. This is not only due to the enormous increase in the use of biochemical inputs since the Green Revolution, but also to the declining economic viability of wet rice cultivation with the discontinuation of input subsidies and the increasing control of its market prices. Moreover, social accessibility of wet rice land did not improve with the increase in rural population pressure and the advancing commercialization of production, both of which exerted pressure on several traditional resource allocation and sharing mechanisms

(cf. Hüsken 1979, 1989; Hardjono 1986; Titus et al. 1994). Considering that the crisis has positively affected the spread and the cultivation techniques of the first two upland farming systems – due to very favorable commodity prices and low input requirements – it seems safe to assume that the crisis has also improved the sustainability of resource use in the upland areas in general. In her study on the crisis impacts on upland farming in Parigi (South Sulawesi), Singeling (2005) arrives very much at the same conclusion, as did Baiquni (2006) in his study on the upland farming villages in Yogyakarta province.

At the same time, however, the crisis has probably also expanded the area used for *tegalan* food crops and upland horticulture systems which are very sensitive to soil erosion and depletion, as well as to crop failure due to drought, plant diseases, and so on. Here, the crisis impact on sustainability therefore was mainly detrimental, as was also concluded by Rijerse (2005) in her study on upland agriculture in the mountain village of Lembanna (South Sulawesi). A special case is presented in Burger's (2004) thesis on changing resource management in upland agriculture in the aftermath of the crisis in Kerinci (West Sumatra). Here, a stable agro-forestry system based on the cultivation of coffee and cinnamon trees, which performed well during the peak of the crisis, completely collapsed in its aftermath when free-falling world market prices and advancing globalization effects necessitated a shift to the more rewarding, but ecologically less sustainable cultivation of vegetables for export. With respect to the crisis impact on wet rice farming, the trend is less clear. Under the pressure of stagnant rice prices and steeply rising prices of biochemical inputs and fuel, many larger farmers decided to switch to more profitable types of annual or seasonal crops such as soybean, groundnuts, or vegetables and, in some instances, even to tree crops such as citrus or snake fruit (cf. chapters 5 and 4, respectively). The smaller farmers, however, often seem to have stuck to wet rice farming for subsistence purposes, but with a distinctly reduced use of modern inputs as they usually fell back on less demanding traditional species (cf. Singeling 2005).

Certainly the most harmful effects have been the crisis impacts on the utilization of "open access" resources, such as forest reserves and coastal waters, where illegal practices of exploitation often inflicted much harm (cf. chapters 10 and 9, respectively, and Burgers 2004). Many of these practices, however, cannot be blamed on the economic crisis only, because it seems that they are also closely related to the subsequent introduction of local and regional forms of autonomy which have weakened central control over these resources (cf. Kartodiharjo & Jhamtani 2006). In sum, therefore, the crisis probably has had a predominantly negative impact on rural resource use in Indonesia, but with large regional variations in net outcomes, and by far not as negative as

might have been expected as compared to earlier experiences during the Japanese occupation (1942-1945) or the Revolution period (1945-1949), when large-scale deforestation and food crop cultivation on steep slopes caused huge problems of erosion, soil depletion, flooding, and drought, and subsequent famines (cf. Donner 1989; Hardjono 1991).

Winners and losers of the crisis

By summarizing the findings on the impacts of the crisis and the responses at both the community and the household levels, we might try to answer the final question: who were the winners and the losers of the crisis in rural Indonesia? Clearly, the question cannot be easily answered, because there is no direct and linear relationship with household characteristics such as socioeconomic status, gender, or age group, or with community characteristics such as the prevailing type of resource use, social organization, or level of commercialization. Each of these factors played a role, but often in opposite directions. A few generalizations, however, still can be made. Survival type households consisting of young starters or aged (single) parents in communities depending on intensive food crop farming and non-farm side jobs, definitely belong to the losers. To a lesser extent, this also holds for survival households with petty food crop farms in dry upland areas and no opportunity for nearby off-farm employment, and who therefore, had no other choice but to retreat into subsistence production and low level consumption (cf. Kutanegara & Nooteboom 2002). In communities with different resource use systems, however, survival households often could seize opportunities for maintaining or even improving their positions, in spite of the crisis or even due to the crisis (cf. chapters 8, 9, and 3, respectively).

On the other hand, accumulation type households in highly commercialized food crop communities sometimes also became losers. This was especially the case among the older types of households which had to cope with a shrinking labor force, suppressed prices for staple foods, sharply rising costs of capital inputs, and inflexible production conditions prevailing in wet rice and sugarcane cultivation. In the case of perennial cash crop production for export markets, or horticultural production for growing urban markets, accumulation households, however, often enjoyed great opportunities for expanding their (farm) enterprises and raising their consumption level. So, winners and losers are found among all types of livelihood systems and household strategies, although it is also true that they tend to predominate in particular categories.

At the community level, winning or losing the confrontation with the impacts of the crisis seems, first of all, to be determined by the domi-

nant types of resource exploitation, as each of these resource use systems has its own vulnerability to the crisis and offers its own opportunities for coping with its impacts. At least as important, however, have been the role of social factors, such as social cohesion and the flexibility of the institutional framework for allocating resources. Destitute survival households, living in the densely populated and intensively farmed areas of Central Java, for example, still had some access to basic needs because of the flexibility of their own social networks and some external support from the government's social safety net (JPS) program. The same crucial role of social networks in obtaining a minimum of livelihood security was also found in the relatively isolated, but no longer self-sufficient types of upland communities, which depend on extensive migration networks for additional incomes that could be reestablished in the aftermath of the crisis (cf. chapters 1,7, and 3, respectively).

Even in the highly commercialized cash-crop-producing communities, there was still some redistributive role of "traditional" sharecropping, credit, and labor arrangements, which offered opportunities for the poor or landless farmers and newcomers to participate in commercial production, or in food crop production through, for example, rotating user rights (cf. Burgers 2004).

In these cases, however, the traditional institutions were usually transformed into more business-like and exploitive types of arrangements, used by large farmers to switch to more lucrative types of activities without abandoning their land and agricultural interests. Moreover, some case studies seem to suggest that institutional flexibility in resource allocation was greater in culturally and ethnically homogeneous types of communities with sufficient social cohesion than in heterogeneous pioneer farming communities where economic crises and resource pressures tend to lead to tensions and ruptures along ethnic lines (cf. chapter 2, and Roth 2002).

Finally, winning or losing the confrontation with the crisis also turned out to be highly affected by external, macro-level conditions such as government policies and interventions, world market prices, and the encroaching globalization process. The last mentioned factors of course are beyond the control of local farmers, authorities, or even national governments, but this does not imply that they remain passive in their response to the impacts of these macro-level factors. As we have noticed before, perennial cash crop farmers, for example, developed cropping systems with which it was possible to "ride the waves" of the rising and falling world-market prices. A similar flexibility has been observed among non-farm producers focusing on the production of cheap substitutes for expensive (imported) manufacturing products, or – reversely – on the production of artisanal products and furniture for exports (cf. Rijanta 2005; Sandee 2002).

The most spectacular phenomenon, however, was the increase in inter-regional and international labor migration as an instrument for tapping external resources by households under severe livelihood pressure. Both in the relatively isolated and more integrated types of rural communities this became an increasingly important safety valve in the aftermath of the crisis, as it enabled many of these households to maintain their levels of consumption and at the same time invest in their (new) economic pursuits (cf. Burgers 2004, and chapters 1 and 5).

On the other hand, however, it should also be acknowledged that the combined forces of the crisis and spreading globalization, often have caused great harm to the local environment. This has been especially the case in rural areas with "open access" resources that were often overexploited through overfishing, illegal logging, deforestation, and land grabbing. Moreover, increasing international competition has often added to the plight of small farmers in food crop production through cheap imports of rice, soybeans, and wheat flour which substitute local staple foods (cf. Gérard & Ruf 2001).

This takes us to the final conclusion that the impacts of the economic crisis itself and its aftermath on rural livelihoods in Indonesia have been so diverse that it is hardly possible to arrive at a clear balance of benefits and losses. This conclusion, of course, is no surprise for a vast and diversified country such as Indonesia, but what has been a surprise is the great flexibility of the various types of communities and households in coping with these varied conditions and impacts, so that the impacts have not been as devastating as might be expected from earlier experiences in the 1930s (cf. Lont & White 2003) and the enormous rise in rural population pressure in the ensuing period.

It seems, however, that besides the persistent role of social flexibility, there is also the fundamental difference between the nature and impacts of the world economic crisis in the 1930s and the Asian crisis at the end of the 1990s. The first crisis engendered mass dismissals and free-falling prices and wages through tight monetary policies and a worldwide collapse of the demand for commodities, whereas the latter crisis was primarily monetary in nature with a regional dimension, which hardly caused a decline in demand for raw materials and commodities at the world market level. Instead of tight money conditions, the domestic market in Indonesia was plagued by high inflation rates. Consequently, domestic demand for basic farm and non-farm products did not completely collapse, while external demand for cash crops even increased due to the currency depreciations. This, in turn, enabled a further growth and diversification of the various types and sectors of the rural economies, which was confirmed by the fact that the agricultural sector was the first to recover from the crisis in Indonesia (cf. Gérard & Ruf 2001; Booth 2002). In addition there were greater external

opportunities for the rural communities, due to the continuing integration of the rural and urban economies which together with the emerging process of globalization have at least partly contributed to create "windows of opportunity" and ease increasing pressures upon local resources; factors that were clearly absent during the crisis in the 1930s and which must have nourished the remarkable flexibility and resilience of rural households during the last economic crisis. The muted impact of the crisis in rural areas and the success of many rural households in coping with these impacts are also reflected in the frequently echoed answer "Crisis? What crisis?" when the respondents were asked about their own experiences (cf. Hüsken 1999; Burgers 2004; Singeling 2005; Rijerse 2005). Of course, this comment does not imply an absence of the crisis phenomena as such, but rather serves to stress their limited impact or relevance for the respondent's case.

In this respect, the conclusions of the "Coping with Crisis in Indonesia" research program seem to lend more support to the moderately optimistic view presented by Manning (2000) than the alarmistic view presented by Breman and Wiradi (2002). The latter authors emphasize the irreversibility of increasing pressures upon rural livelihoods and communities, which under conditions of increasing commercialization, globalization, and the economic crisis inevitably will lead to the reinforcement of exclusionary mechanisms and social polarization.[4] Manning, on the other hand, emphasized the temporary character of the crisis and the potentially beneficial effects of continuing rural-urban integration, economic recovery and internationalization, which may open new "windows of opportunity" for rural communities. All the evidence on social flexibility and resilience of livelihoods in the face of the crisis, however, should not conceal the fact that the crisis certainly has contributed to greater social inequality in the various types of rural communities, because the crisis hit the poorer (survival type) households much harder than the wealthier types of households, and consequently set them further back into marginal positions of extreme dependency. Usually, these households were not so much deprived from any access to work or food, but rather from influential networks, stable incomes, and vital facilities, such as more advanced types of education and health care. For the poorer households the crisis has been a very real experience, but at the same time not unfamiliar as their livelihood conditions are regularly plagued by recurring crises of both a personal and structural nature.

Notes

1 Research data from Yogyakarta Province, Makassar, and West Java all indicate an increase in private housing construction during the crisis years, because of the necessity to find safe objects for money hoarding under conditions of hyperinflation, as well as to build additional accommodation and income opportunities through renting rooms to students, migrant workers, and boarding relatives (cf. chapter 7, and Titus 1999; Breman & Wiradi 2002). This inevitably also created a rising demand for cheap, that is, domestically produced building materials such as timber, bamboo, cement, bricks, and roof tiles (cf. Van den Berg & Binnendijk 2002). Additionally, the demand for food essentials such as fish did not show any tendency to decline during the crisis, because there are hardly any substitutes available (except cheaper species) and demand for fish consequently tends to be inelastic (cf. Titus 1999).

2 Actually, the rise of more business-oriented types of resource allocation and exploitation which are no longer based on the performance of mutual services, such as the renting of land, produce-sharing agreements, contract work, and piece wages, is not so much related to the crisis as such, but rather to the broader, long-term processes of agricultural modernization and commercialization. There is strong evidence, however, that the crisis may have reinforced the ongoing trends of transformation of these allocation and exploitation mechanisms because of their cost-reducing aspects. These cost reductions became even more necessary with the grossly inflated prices for both capital and labor inputs during the peak of the crisis and its aftermath.

3 Forest land was often cleared, planted and sharecropped by newcomers according to a bonus system, which provided essential food supplies for a two- to three-year period, that is, in the interim period before the newly planted perennial crops could mature. This system even survived under conditions of a price slump for the perennial crops in the aftermath of the crisis, because its costs still could be covered from the expected crop yields and price recoveries in the near future (cf. chapter 3).

4 Breman and Wiradi (2002, pp. 3-6) question the view held by Manning (2000) that the increased absorption of rural surplus labor (including return migrants) in the agricultural sector during the peak of the crisis probably was a temporary phenomenon in the face of continuing long-term trends of urbanization and rural-urban labor mobility. But this is exactly what seems to have happened in the aftermath of the crisis. The resumption of urban dominance in economic and regional development with the first signs of economic recovery and advancing internationalization enabled a further growth of the informal sector in these urban centers. Looking for work in this urban sector still proved to be more attractive to the young rural labor force than remaining in a dependent position in the stagnant subsistence sector at home. Another reason for the more alarmist view presented by Breman and Wiradi (2002) might be that their research focused on exactly those types of rural communities in Java which were identified in our study as belonging to the most vulnerable types, namely the densely populated hinterland areas of large urban centers depending on commercial food crop farming and sugarcane cultivation with high input needs, while at the same time subjected to food price controls, the abolishment of input subsidies, and the collapse of the urban (labor) market for their own non-farm incomes.

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